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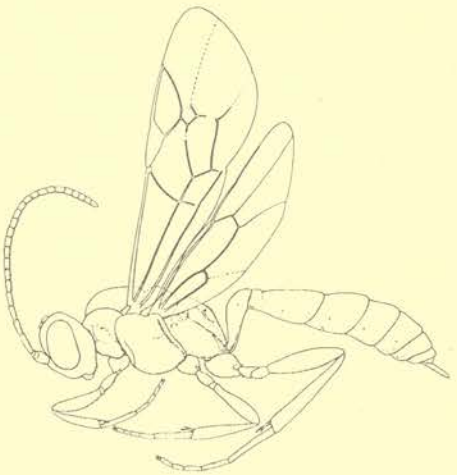
KEYS TO THE GENERA OF ICHNEUMONIDAE (HYMENOPTERA) OF TAIWAN

BY

SHUI-CHEN CHIU



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KEYS TO THE GENERA OF ICHNEUMONIDAE (HYMENOPTERA) OF TAIWAN

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INTRODUCTION

Ichneumonidae is a large family of hymenopterous insects, which are recognizable by their long antennae (usually with more than 16 segments), front wing with costal and subcostal veins present and fused together, and second recurrent vein present. In a large percentage of the species in the family, the ovipositor projects conspicuously beyond the apex of abdomen.

Ichneumonids are parasites of larvae or pupae of other insects, except for some species that attack spiders or spider eggs. No adults or nymphs of insects have been reported as their hosts. As natural enemies of other insects, ichneumonid parasites always kill hosts, therefore they are important in suppressing insect pests. Increased knowledge of Ichneumonidae will undoubtedly enhance the possibilities of using them for biological control of pests of agricultural importance.

Worldwide, there are an estimate of 60,000 species in Ichneumonidae. In Taiwan, the estimated number of species is about 2,500 but only about 533 of them have been recorded thus far. Some 1,200 additional species have been collected in Taiwan and are presently deposited in the research collection of the Taiwan Agricultural Research Institute, pending identification or description as new species.

Ichneumonid collection used for this study was initiated around 1921. Prior to 1941, many Japanese entomologists, particularly Mr. J. Sonan (presently J. Minamikawa), contributed a great deal by adding numerous specimens to the collection. After 1949, the collection was curated and upgraded by the author. During 1980–1983, it was double in size to a total of 68,252 specimens.

In 1983, under the auspice of the National Science Council of Taiwan, Dr. Henry K. Townes was invited to provide his assistance in sorting the entire ichneumonid collection to genera, except for the subfamily Ichneumoninae. The keys presented herein are the modification of that published by Dr. Townes. This paper is to serve as a guide to the study of ichneumonid fauna of Taiwan. It contains keys to the subfamilies, tribes, genera and subgenera now known to occur in Taiwan. There are 389 genera in the keys. Of these, 211 have been previously reported from Taiwan in scientific literature. The additional 178 genera are recorded for the first time in Taiwan.

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assistance in identifying the genera of Ichneumonidae, and to her colleagues, Messrs. K. S. Lin, K. C. Chou, L. Y. Chou, C. Lin and S. C. Lin for their assistance in collecting insects. The support from the National Science Council of Taiwan through grant-in-aid (NSC69B-0409-08-08, NSC70-0409-B055-09, NSC70-0409-B055-11 and NSC73-0204-B055-01) enabling the increase of insect collection is also acknowledged.

Key to the subfamilies of Ichneumonidae

1. Clypeus and face forming a broad, rather weakly convex surface, clypeus not separated from face by a distinct groove. Areolet rhombic and large. Tergite I with a large glymma, its spiracle near or a little behind the middle. Second and following tergites nearly always polished. Male clasper ending in a long rod. Female subgenital plate large, triangular in profile. . . . . 17. **Mesochorinae**

   Not agreeing entirely with the above. (Face and clypeus usually narrower and with a more irregular surface. Clypeus usually separated from face by a groove. Areolet various, sometimes absent, seldom rhombic, or sometimes the wings reduced or absent. Tergite I with or without a glymma, its spiracle varying in position: near base, near middle, or near apex. Second and following tergites polished, mat, and/or punctate. Male clasper not ending in a long rod except in *Lusius*, in some species of *Nematopodius* and *Charops*, and rarely in other genera. Female subgenital plate various, often inconspicuous in profile. 2

2. Spiracle of abdominal tergite I placed behind the midlength of the tergite. Some genera of Gelinae are borderline in this character. These can be traced through either half of the couplet. 3

   Spiracle of abdominal tergite I placed near the midlength of the tergite or definitely in front of the midlength. 17

3. Abdomen compressed, its third and fourth segments deeper than wide. 4

   Abdomen depressed or cylindric, its third and fourth segments wider than deep. 10

4. Second brachial cell with a long spurious vein that parallels its hind margin. First intercubital vein (the only intercubital vein that is present) joining cubital vein distad of second recurrent vein by a distance greater than half its length. Medium to large sized species, usually pale brown in color. Ocelli very large. . . . . 16. **Ophioninae**

   Second brachial cell without a spurious vein or with only a short one. First intercubital vein joining cubital vein basad of, opposite, or less than half its length distad of second recurrent vein, or if rarely it joins cubitus more than half its length beyond second recurrent. Ocelli small to large. 5

5. Propodeum without areas bounded by regular carinae, with at most a transverse basal carina, its sculpture usually coarse and reticulate. Areolet absent. Hind tarsus often swollen, especially in males. . . . . 19. **Anomaloninae**

   Propodeum usually areolated or with additional carinae besides the basal transverse one, its sculpture usually fine, not coarsely reticulate. Areolet present or absent. Hind tarsus usually not swollen. 6

6. Posterior transverse carina of mesosternum complete, or rarely (in *Meloboris*, and sometimes in *Transosema*, and *Phobocampe*) interrupted in front of each middle coxa, in which cases the clypeus is confluent with face. 7

   Posterior transverse carina of mesosternum absent, or interrupted in front of each middle coxa. Clypeus separated from face by a groove. 8

7. Tibial spurs inserted in a same area with the tarsus, the apex of each tibia thus having a single membranous insertion area. Clypeus usually confulent with face. Face usually black. . . . . 12. **Porizontinae**

Tibial spurs inserted in a separate area from the tarsus, the apex of each tibia thus having two insertion areas separated by a sclerotized bridge. Clypeus separated from face by a groove. Face usually more or less pale. . . . . 13. **Cremastinae**

8. Maxillary palpus 4 segmented. Labial palpus 3 segmented. Clypeus with an apical fringe of long parallel bristles. Areolet absent. . . . . .15. **Tersilochinae**

Maxillary palpus 5 segmented. Labial palpus 4 segmented. Clypeus without an apical fringe of long parallel bristles. Areolet usually present. 9

9. Areolet pentagonal or sometimes absent. Epipleurum of tergite II with sparse hairs or none. Tergite I without a glymma. . . . . 8. **Gelinae** (females of genus *Atractodes*)

Areolet triangular or subquadrate, present or absent. Epipleurum of tergite II with dense hairs. Tergite I with or without a glymma. . . . . 14. **Phrudinae** (in part)

10. Hind tibia with 1 spur. . . . . 2. **Tryphoninae** (genus *Sphinctus*)

Hind tibia with 2 spurs. 11

11. Clypeus confluent with face. Areolet stalked above. Posterior mesosternal carina complete. . . . . .12. **Porizontinae** (a few specimens)

Clypeus separated from face by a groove, or if confluent then the areolet sessile above. Wings sometimes reduced or absent. Posterior mesosternal carina usually incomplete. 12

12. Labrum large and conspicuously exposed below the truncate clypeus. Flagellum with 12 or 13 segments. . . . . .5. **Adelognathinae**

Labrum smaller, mostly or entirely concealed, without a median apical notch. Flagellum with more than 13 segments. 13

13. Propodeum without carinae. Ovipositor tip with a dorsal subapical notch and the lower valve tip without distinct teeth. Sternite I often not fused with its tergite. . . . . 10. **Banchinae** (genus *Leptobatopsis*)

Propodeum with carinae. Ovipositor tip without a dorsal subapical notch, or with a weak notch and the lower valve tip with distinct teeth. Sternite I fused with its tergite. 14

14. Inner margins of eyes strongly convergent ventrad. Areolet pointed or stalked above. Second recurrent vein strongly inclivous. Front wing 2.5 to 6.0 mm. long. . . . . 21. **Microleptinae** (a few genera)

Inner margins of eyes not convergent ventrad, or less strongly convergent. Areolet usually sessile above, sometimes absent. Wings sometimes reduced or absent. 15

15. Sternaulus short or absent, less than half as long as mesopleurum. Ovipositor not extending conspicuously beyond apex of abdomen except rarely, its sheath always rigid. Second intercubital vein present except in *Lusius* and *Epitomus*. Mandible with 2 teeth or sometimes only 1. Clypeus usually broad, weakly convex usually with broadly truncate or subtruncate apex, its apical margin not impressed. . . . . 25. **Ichneumoninae**

Sternaulus usually present and usually at least half as long as mesopleurum. Ovipositor usually extending conspicuously beyond apex of abdomen, its sheath flexible except when very short. Second intercubital vein present or absent. Mandible with 2 teeth. Clypeus various, usually moderately strongly convex and apical margin usually impressed. 16

16. Dorsal end of prepectal carina below midheight of hind margin of pronotum and some distance from front edge of mesopleurum. Sternaulus 0.2 to 0.5 as long as mesopleurum. . . . . .

. . . . . 4. **Labiinae**

Dorsal end of prepectal carina nearly always above midheight of hind margin of pronotum and at, or close to front edge of mesopleurum. Sternaulus usually at least half as long as mesopleurum. . . . . 8. **Gelinae** (most genera)

17. Clypeus not separated from face by a groove, the face and clypeus either forming a smooth, strongly convex surface or (in *Metopius*) with a large shield-shaped flat or concave area that is bounded by a carina. 18

Clypeus separated from face by a more or less distinct groove, or if rarely the groove is absent then the face is rather flat. 21

18. Eye hairy. Areolet absent. Tarsal claws of female with a large basal lobe. . . . . 1. **Ephialtinae** (genus *Schizopyga*)

Eye usually bare. Areolet present or absent. Tarsal claws of female simple or pectinate. . . . 19

19. Scape subcylindric, 1.8 to 2.4 as long as wide. Upper edge of face without a projection over or between the antennal sockets. . . . . 23. **Orthocentrinae**

Scape ovoid, 1.2 to 1.7 as long as wide, upper edge of face with or without a projection over or between antennal sockets. 20

20. Upper edge of face without a projection over or between the antennal sockets. Tarsal claws pectinate to the apex. . . . . 11. **Scolobatinae** (genus *Rhorus*)

Upper edge of face with a projection over or between the antennal sockets. Tarsal claws simple or pectinate. . . . . 18. **Metopiinae**

21. Upper tooth of mandible broad, more or less distinctly divided into an upper and lower point by a weak notch or impression on its apical margin, the mandible thus tending to appear 3-toothed. Tergite 1 rectangular, not distinctly narrowed basad. Front wing 3.5 to 9.0 mm. long. Ovipositor not extending beyond apex of abdomen. . . . . 24. **Diplazontinae**

Upper tooth of mandible not divided into 2 points, the mandible thus 2-toothed or 1-toothed. Tergite I usually narrowed basad. 22

22. Female subgenital plate very large, folded on the midline, elongate triangular with its point projecting beyond tip of abdomen. Front and middle tarsal claws either simple or with a subapical appressed tooth. Ovipositor long, without a subapical dorsal notch. . . . . 20. **Acaenitinae**

Female subgenital plate smaller, sometimes triangular but not projecting conspicuously beyond tip of abdomen. Front and middle tarsal claws simple, pectinate, or with a large basal lobe, without a subapical tooth except in some Ephialtinae (in which genera the prepectal carina is absent). Ovipositor short to long, sometimes with a subapical dorsal notch. 23

23. Labrum conspicuously exposed below apex of clypeus. Nervellus not intercepted. Notaulus forming a small impression some distance above margin of mesoscutum, from this point turning anterolaterad and continued weakly to mesoscutal margin. Front and middle tarsal claws of female with a large basal lobe, those of male simple. . . . . 22. **Orthopelmatinae**

Labrum not or only shortly exposed below apex of clypeus. Nervellus usually intercepted. Notaulus and tarsal claws various. 24

24. Apical margin of front tibia produced on the outer side into a small tooth (search for this by looking at tibia from distal end). . . . . 11. **Scolobatinae** (except genus *Rhorus*)

Apical margin of front tibia rounded on the outer side, without a tooth 25

25. Apex of scutellum with a spine about as long as the scutellum. Sterna of abdominal segments II to IV completely sclerotized. . . . . 7. **Agriotypinae**

Apex of scutellum without a long spine. Sterna of abdominal segments II to IV partly to entirely membranous. 26

26. Epipleurum of tergite III large, not separated from its tergite by a crease. Ovipositor as long as apical depth of abdomen, weakly upcurved, moderately stout at base, tapered gradually to a slender point that lacks a subapical dorsal notch and lacks teeth on the lower valve. Front wing 1.4 to 4.8 mm. long. . . . . 14. **Phrudinae** (in part)

Epipleurum of tergite III vestigial to large, nearly always separated from its tergite by a crease. Ovipositor various, seldom entirely as above. Front wing usually more than 3.4 mm. long. 27

27. Upper valve of ovipositor with a subapical dorsal notch, not raised at the notch. Lower valve of ovipositor tip smooth or with very small, inconspicuous teeth or ridges at the apex. 28

Upper valve of ovipositor without a subapical dorsal notch, or with a weak subapical notch that on top of a raised nodus. Lower valve of ovipositor tip usually with conspicuous teeth or ridges. 30

28. Second recurrent vein with 1 bulla or rarely with 2, the vein subvertical or inclivous. Tarsal claws usually pectinate. Submetapleurual carina usually forming a strong lobe just behind middle coxa. Female subgenital plate in lateral view large and conspicuous. Sternite I not fused with its tergite. 29

Second recurrent vein with 2 bullae or rarely with 1, the vein inclivous. Tarsal claws simple. Submetapleural carina not forming a strong lobe behind middle coxa. Female subgenital plate in lateral view inconspicuous or not visible. Sternite I often fused with its tergite. . . . . 21. **Microleptinae** (most genera)

29. Areola well defined and tergites II–IV lacking oblique grooves. Ovipositor tip without a dorsal notch. . . . . 9. **Stilbopinae**

Areola not defined unless tergites II–IV have a pair of oblique grooves. Ovipositor tip nearly always with a dorsal notch. . . . . 10. **Banchinae** (most genera)

30. Tarsal claws usually pectinate, sometimes simple, never with a large tooth. Clypeus often wide and with a marginal fringe of setae, without a median apical notch. Abdominal sternite I nearly always separate from its tergite. Eggs attached by a stalk or by a modification of a stalk, attached either to skin of host (Tryphoninae) or to plants (Eucerotinae). 31

Tarsal claws not pectinate, female often with a large basal lobe. Clypeus various, sometimes with a median apical notch. Abdominal sternite I sometimes fused with its tergite. Eggs not attached by a stalk. 32

31. Genal carina joining oral carina, or sometimes the genal carina absent. Pronotum without a median dorsal process. Flagellum cylindric, not flattened near middle. . . . . 2. **Tryphoninae** (except genus *Sphinctus*)

Genal carina joining base of mandible. Pronotum with a median dorsal projection that overhangs anteriorly. Flagellum slightly (female) to strongly (male) flattened and widened near middle. . . . . 3. **Eucerotinae**

32. Sternite I more or less free from its tergite. Tergite I with a glymma, and/or the propodeum entirely without the basal transverse carina. Tarsal claws often with a tooth or basal lobe, especially in females. . . . . 1. **Ephialtinae**

Sternite I completely fused with its tergite. Tergite I without a glymma. Propodeum with at least a trace of the basal transverse carina. Tarsal claws simple. 33

33. Sternaulus indistinct, absent, or less than half as long as mesopleurum. Male flagellum without tyloids. Propodeum with longitudinal carinae, usually also with transverse carinae. Mandible with 1 or 2 teeth. . . . . 6. **Xoridinae**

Sternaulus usually distinct and more than half as long as mesopleurum. Male flagellum usually with tyloids. Propodeum with 1 or 2 transverse carinae and sometimes the median basal area defined, but with no other carinae. Mandible with 2 teeth. . . . . 8. **Gelinae** (a few genera)

Subfamily **EPHIALTINAE**

Key to the tribes of Ephialtinae

1. Mesoscutum covered with sharp transverse wrinkles. Last tergite of female with a truncate horn at apex. . . . . 7. **Rhyssini**

Mesoscutum without transverse wrinkles, or sometimes with transverse wrinkles on only a small portion of its surface. Last tergite of female without a horn at apex. 2

2. Prepectal carina absent. Tergite I without a dorsolateral longitudinal carina at level of spiracle. Upper part of temple with a scabrous area except in *Poemenia*. . . . . 6. **Poemeniini**

Prepectal carina nearly always present. Tergite I usually with a dorsolateral longitudinal carina. Upper part of temple without a scabrous area. 3

3. Mesopleural suture without a distinct angulation near the middle, or if there is an angulation (in the genus *Xanthopimpla*) the clypeus divided by a transverse suture and the apex of mandible twisted so that its lower tooth is toward the mouth. When hind tibia is banded there are apical and basal dark bands and a median pale band, the extreme base thus being dark. . . . . 3. **Ephialtini**

Mesopleural suture with a weak angulation near the middle. Clypeus never divided by a transverse suture and the apex of the mandible twisted. When hind tibia is banded there are usually apical and subbasal dark bands and median and basal pale bands, the extreme base thus being pale. 4

4. Abdominal sternite I completely fused with its tergite, glymma absent. Occipital carina complete. . . . . 5. **Diacritini**

Abdominal sternite I more or less free from its tergite, glymma present (except in *Pachymelos* of the Pimplini). Occipital carina lacking dorsally. . . . . 5.

5. Tarsal claws of female without a basal tooth. Areolet present. Male subgenital plate often longer than wide. . . . . 4. **Theroniini**

Tarsal claws of female, or at least the front claws of female, with a basal tooth. Areolet present or absent. Male subgenital plate usually wider than long. 6

6. Last segment of tarsus usually not enlarged, usually a little narrower than the basitarsus, if wider than the basitarsus then the occipital carina absent above. Areolet present except in *Zaglyptus, Clistopyga, Pachymelos*, and some *Tromatobia* and *Acropimpla*. Ovipositor not tapered with approximately uniform size between its middle and apex, except tapered in *Clistopyga*. . . . . 1. **Pimplini**

Last segment of tarsus enlarged, a little wider than the basitarsus. Occipital carina complete. Areolet absent except in *Dreisbachia*. Ovipositor tapered from near middle to its apex. . . . . 2. **Polysphinctini**

1. Tribe **PIMPLINI**

Key to the genera of Pimplini

1. Occipital carina absent above (at least medially), sometimes also absent laterally. Nervellus intercepted below middle. 2
   Occipital carina complete above, or sometimes obsolescent at the midline. Nervellus intercepted below, at, or above middle. 4
2. Mesoscutum with rather dense hairs. Ovipositor sometimes downcurved. 3
   Mesoscutum with very few hairs or none, polished. Ovipositor approximately straight. . . . . 17. ***Camptotypus***
3. Areolet present. Sternite I free from its tergite. Glymma present . . . . . 15. ***Alophosternum***
   Areolet absent. Sternite I fused with its tergite. Glymma absent. . . . . 16. ***Pachymelos***
4. Tergite II with a conspicuous oblique groove on each side that runs from base, near the midline, toward the spiracle, the groove more nearly longitudinal than transverse, forming an angle with the transverse axis greater than 45°. Tergite I usually rather long and often nearly as long as tergite II. First intercubitus often as long or nearly as long as second intercubitus. Nervellus intercepted above the middle except sometimes in *Pimplaetus*. Ovipositor cylindric. 5
   Tergite II without a distinct oblique groove that runs from base, near the midline, toward the spiracle, or when such a groove is present it is shallow and more transverse than longitudinal, forming an angle with the transverse axis less than 45°. Tergite I moderately short to very short. First intercubitus shorter than second intercubitus, or second intercubitus absent. Nervellus intercepted below, at, or above the middle. Ovipositor compressed or cylindric. . . . 7
5. Tergite I tending to be cylindric and tapered to a rather narrow base, its basal half about as high as wide. . . . . 7. ***Pimplaetus***
   Tergite I depressed, weakly tapered to a rather broad base, its basal half wider than high. . . . 6
6. Tip of lower valve of ovipositor without a dorsal lobe. Tip of upper valve of ovipositor with a dorsolateral, finely notched ridge. . . . . 6. ***Paraperithous***
   Tip of lower valve of ovipositor with a dorsal lobe that partially encloses tip of upper valve. Tip of upper valve of ovipositor rounded above, without a dorsolateral ridge. . . . . 8. ***Dolichomitus***
7. Occipital carina in the middorsal area horizontal or weakly arched upward, always strong medially. Frontal orbit often marked with white. 8
   Occipital carina in the middorsal area dipped or weakly arched downward, sometimes weak or rarely obsolete at the midline. 11
8. Eye unusually large, its margin strongly notched at the antennal socket. Temple unusually short. Nervellus intercepted below middle. Areolet present. . . . . 10. ***Sericopimpla***
   Eye not unusually large, its margin not more than moderately notched at the antennal socket. Temple moderately long. Nervellus intercepted below, at, or above middle, or sometimes not intercepted. 9
9. Nervellus intercepted below the middle or not intercepted. Ovipositor tapered, its apical half more or less upcurved. Female subgenital plate large and projecting. Areolet absent . . . . . 14. ***Clistopyga***
   Nervellus intercepted above the middle except in some species of *Zaglyptus*. Ovipositor straight, not tapered. Female subgenital plate not projecting. Areolet present or absent. 10

10. Areolet usually present. Propodeum without a distinct lateral subapical tubercle. Basal tooth of ovipositor not enlarged or free at the tip. Lower valve of ovipositor with fine, weak, transverse wrinkling. . . . . 12. ***Tromatobia***

    Areolet absent. Propodeum with a lateral subapical tubercle, which is strong in female, weak in male. Basal tooth of ovipositor large and with a long free tip. Lower valve of ovipositor mostly smooth, finely roughened toward the tip. . . . . 13. ***Zaglyptus***

11. Nervellus intercepted below middle. Ovipositor more or less compressed. 12

    Nervellus intercepted near or above middle. Ovipositor compressed or cylindric. (Intermediate or doubtful specimens should be given a trial run through both halves of the couplet). 13

12. Tergite II with distinct oblique grooves marking off its basolateral corners. Clypeus of male and sometimes part or all of face of male or of both sexes white or yellow. Areolet (when present) receiving second recurrent vein usually at its outer corner. Tip of dorsal valve of ovipositor, in profile, a little concave behind the nodus. Basal ridge of lower valve of ovipositor tip about 15° from the horizontal. . . . . 9. ***Acropimpla***

    Tergite II without oblique grooves marking off its basolateral corners. Clypeus and face of both sexes black or concolorous with rest of head. Areolet receiving second recurrent vein basad of its outer corner. Tip of dorsal valve of ovipositor, in profile, convex or straight behind the nodus, or occasionally a little concave. Basal ridge of lower valve of ovipositor tip 20° to 90° from the horizontal. . . . . 1. ***Scambus***

13. Basal half or more of clypeus rather strongly convex. Ovipositor somewhat compressed, its sheath about 0.3 to 0.7 as long as front wing. Basal ridges on ovipositor tip about 30° from the horizontal. Hind tibia usually with conspicuous black and white banding. . . . . 11. ***Gregopimpla***

    Basal half of clypeus nearly flat. Ovipositor cylindric, its sheath about as long as, or longer than front wing. Basal ridges on ovipositor tip mostly 40° to 90° from the horizontal. Hind tibia without conspicuous black and white banding. 14

14. Clypeus about 2.5 as wide as long, rather flat, in the male always white or whitish. Lower tooth of mandible a little longer than upper tooth. Ovipositor sheath 1.8 to 5.0 as long as front wing. Ovipositor tip a little depressed, the dorsal end of its basal ridges turned strongly forward. . . . . 4. ***Pimpla***

    Clypeus about 1.8 as wide as long, ferruginous to black, never white. Lower tooth of mandible as long as upper tooth. Ovipositor sheath 1.0 to 2.0 as long as front wing. Ovipositor tip cylindric or a little compressed, the dorsal end of its basal ridges not turned forward. 15

15. Sternite I about 0.85 as long as its tergite. Abdomen exceptionally long and cylindric. . . . . 3. ***Leptopimpla***

    Sternite I about 0.4 to 0.6 as long as its tergite. Abdomen not exceptionally long. 16

16. Apical impunctate band of tergites II–V, in dorsal view, about 0.15 as long as wide. Upper surface of propodeum without a median longitudinal groove. Punctures on propodeum very large. . . . . 2. ***Flavopimpla***

    Apical impunctate band of tergites II–V, in dorsal view, about 0.25 as long as wide. Upper surface of propodeum with a weak median longitudinal groove. Punctures on propodeum moderate sized. . . . . 5. ***Liotryphon***

2. Tribe **POLYSPHINCTINI**

Key to the genera of Polysphinctini

1. Areolet present. Eye sparsely hairy in male, more densely hairy in female. . . . 1. ***Dreisbachia***
   Areolet absent. Eye not conspicuously hairy except in *Schizopyga* and sometimes in *Zabrachypus*. 2
2. Clypeus not distinctly separated from face. Upper end of prepectal carina near front edge of mesopleurum. Eye hairy. . . . . 2. ***Schizopyga***
   Clypeus separated from face by a groove. Upper end of prepectal carina distant from front edge of mesopleurum 3
3. Median lobe of mesoscutum with a vertical carina anteriorly on each side (but this carina sometimes very weakly developed). Clypeus in profile strongly convex. . . . . 4. ***Acrodactyla***
   Median lobe of mesoscutum without a vertical carina anteriorly on each side. 4
4. Discoidella completely absent and mesoscutum with hairs all over. . . . . 7. ***Sinarachna***
   Discoidella present and/or mesoscutum hairless or partly hairless. 5
5. Tergites III and IV with oblique grooves which delimit a median rhombic area on each, or with transverse impressions, or almost smooth. Ovipositor sheath 1.0 or 2.0 as long as apical depth of abdomen 6
   Tergites III and IV each with a median pair of large rounded swellings. Ovipositor sheath usually 3.0 to 4.0 as long as apical depth of abdomen, or shorter in *Oxyrrhexis*. 7
6. Mesoscutum rather densely hairy all over. . . . . 3. ***Zabrachypus***
   Mesoscutum partly or entirely hairless, at least its lateral lobe hairless medially. . . . . 8. ***Zatypota***
7. Abdominal tergites with rather close, coarse punctures. Ovipositor sheath 1.4 to 1.8 as long as apical depth of abdomen. . . . . 5. ***Oxyrrhexis***
   Abdominal tergites with sparse punctures or almost impunctate. Ovipositor sheath 3.0 to 4.0 as long as apical depth of abdomen. . . . . 6. ***Polysphincta***

3. Tribe **EPHIALTINI**

Key to the genera of Ephialtini

1. Clypeus not divided into basal and apical parts by a transverse suture. Mandible broad at the tip, the lower tooth not distinctly smaller than upper tooth. 2
   Clypeus divided into basal and apical parts by a transverse suture. Mandible tapered to a narrow tip, the lower tooth much smaller than upper tooth. 4
2. Inner margin of eye weakly concave above antennal socket. Face of male black. Tarsal claws of female without a basal tooth. . . . . 3. ***Coccygomimus***
   Inner margin of eye rather strongly concave at antennal socket. Face of male white, yellow, or black. Front tarsal claws of female usually with a large tooth. 3
3. Ovipositor straight. Face and orbits of both sexes entirely black. . . . . 1. ***Itoplectis***
   Ovipositor hooked downward at tip. Face of male largely or entirely white or yellow. Orbit of female narrowly whitish in front. . . . . 2. ***Ephialtes***
4. Tip of mandible turned 90° so that the lower tooth is inward. Propodeum polished and usually with strong carinae. Nervellus intercepted at about its upper 0.25. Body yellow, usually with black spots. . . . . 6. ***Xanthopimpla***

Tip of mandible not or only slightly turned. Propodeum punctate, striate, or mat and without carinae. Nervellus intercepted at its upper 0.15 or above, sometimes the discoidella arising from cubitella near nervellus. Body color various. 5

5. Hind femur without a tooth beneath. Nervulus far distad of basal vein. Abdomen punctate or somewhat mat. . . . . 4. ***Echthromorpha***

Hind femur with a small, acute tooth beneath, near its apex. Nervellus opposite or basad of basal vein. Abdomen polished and impunctate. . . . . 5. ***Lissopimpla***

4. Tribe **THERONIINI**

Key to the genera of Theroniini

1. Abdomen polished, almost impunctate. Tarsal claws enlarged, each with an enlarged bristle having a spatulate tip. Body brownish yellow . . . . . 1. ***Theronia***

Abdomen punctate. Tarsal claws not enlarged, without an enlarged bristle having a spatulate tip. Body black. . . . . 2. ***Perithous***

5. Tribe **DIACRITINI**

Diacritus is the only genus known from Taiwan.

6. Tribe **POEMENIINI**

Key to the genera of Poemeniini

1. Mandible with 2 apical teeth, the upper tooth smaller. Clypeus evenly convex, about 2.0 as wide as long. Tarsal claws simple. . . . . 1. ***Poemenia***

Mandible without 2 teeth, its apex truncate and chisel-shaped. Clypeus basally convex and apically impressed, 1.3 to 1.8 as wide as long. Tarsal claws of middle legs with a subapical tooth. 2

2. Front claw of hind tarsus bent at a sharp angle, the inner claw more weakly curved. Apical bristle on front claw of hind tarsus enlarged and spatulate. . . . . 2. ***Eugalta***

Front claw of hind tarsus not bent at a sharp angle and not more sharply curved than inner claw. Apical bristle on front claw of hind tarsus not enlarged. . . . . 3. ***Podoschistus***

7. Tribe **RHYSSINI**

Key to the genera of Rhyssini

1. Areolet present. . . . . 1. ***Megarhyssa***

Areolet absent. 2

2. Apex of upper tooth of mandible a little narrower than apex of lower tooth. Hamuli usually with a basal group of 3 hooks, followed distally by single widely spaced hooks. Front edge of collar with a moderately narrow recurved flange. Stigma about 5.0 as long as wide. Tergite I about 1.3 as long as wide, with a weak basal dorsolateral carina. Sternite I of female with a pair of large flat tubercles. . . . . 2. ***Triancyra***

Apex of upper tooth of mandible a little wider than apex of lower tooth. Hamuli with a basal group of 2 hooks, followed distally by single widely spaced hooks. Front edge of collar

with a very narrow, weakly recurved flange. Stigma about 5.0 to 10.0 as long as wide. Tergite I about 1.3 to 3.5 as long as wide. . . . . 3. ***Sychnostigma***

Subfamily **TRYPHONINAE**

Key to the tribes of Tryphoninae

1. Hind tibia with 1 spur or none. 2
   Hind tibia with 2 spurs. 3
2. Hind tibia with a spur that is longer than apical diameter of the tibia. Middle tibia with 2 spurs. Spiracle of tergite I near its apical 0.4. . . . . 1. **Sphinctini**
   Hind tibia without a spur, though sometimes with a short apical spurlike tooth. Middle tibia with 1 spur. Spiracle of tergite I at or in front of its middle . . . . . 5. **Cteniscini**
3. Propodeum either without carinae or with a sublateral crest on each side and with transverse striae. Spur of front tibia with its distal portion straight or slightly outcurved, its antennal brush ending considerably before apex of the spur. . . . . 2. **Phytodietini**
   Propodeum with carinae, never with transversely striae. Spur of front tibia evenly curved, its antennal brush extending nearly to the apex. 4
4. Notaulus long, usually reaching or surpassing center of mesoscutum. The part of tergite I in front of its spiracle at least 1.6 as long as it is wide at its narrowest point. Tergite I without a lateral basal corner projecting above glymma. Areolet absent, except in some species of *Eclytus*. Female flagellum often with a white band. . . . . 3. **Eclytini**
   Notaulus various, usually short or absent but sometimes long. The part of tergite I in front of spiracle less than 1.6 as long as it is wide at its narrowest point (except in *Lagoleptus*). Tergite I usually with a lateral basal corner projecting above glymma. Areolet present or absent. Female flagellum without a white band. . . . . 4. **Tryphonini**

1. Tribe **SPHINCTINI**

Sphinctus is the only genus known from Taiwan.

2. Tribe **PHYTODIETINI**

Key to the genera of Phytodietini

1. Mandible not twisted, its lower tooth usually as large as upper tooth. Nervellus intercepted below middle. Eye margin not definitely notched opposite the antennal socket. Ovipositor about 4.0 as long as apical depth of abdomen. . . . . 1. ***Phytodietus***
   Mandible twisted so that the upper tooth is considerably forward of the much shorter lower tooth. Nervellus intercepted above middle. Eye margin notched opposite the antennal socket. Ovipositor 1.0 to 2.0 as long as apical depth of abdomen. . . . . 2. ***Netelia***

(1) Genus **PHYTODIETUS**

Key to the subgenera of Phytodietus

1. Tergite I constricted between spiracle and base, the prespiracular portion rather narrow. Dorsolateral edge of tergite I mostly or entirely rounded, at least near the spiracle. Tergite

I 1.85 to 3.8 as long as wide in male, 1.55 to 2.5 as long as wide in female. . . . . 1a. Subgenus ***Neuchorus***

Tergite I tapered from spiracle to base or sometimes weakly constricted, the prespiracular portion rather wide. Dorsolateral edge of tergite I angulate or carinate, not rounded. Tergite I 1.5 to 1.9 as long as wide in male, 1.3 to 1.6 as long as wide in female. . . . . 1b. Subgenus ***Phytodietus***

(2) Genus NETELIA

Key to the subgenera of Netelia

1. Pecten of hind tarsal claws extending beyond the true apex, the end point of claws being black and shorter than the penultimate point. Temple flat or weakly convex. . . . . 2b. Subgenus ***Apatagium***

   Pecten of hind tarsal claws not extending beyond the true apex. Temple rather weakly to strongly convex. 2

2. Occipital carina completely absent. Lateral carina of scutellum extending less than half the length of scutellum. . . . . 2d. Subgenus ***Bessobates***

   Occipital carina present except in *N.* (*Netelia*) *baibarana*, which has the lateral carina of scutellum extending to the apex. Lateral carina of scutellum present or absent, often present and extending to apex of scutellum. 3

3. Lateral carina of scutellum reaching to its apex. Thorax usually without definite yellow markings. . . . . 2c. Subgenus ***Netelia***

   Lateral carina of scutellum absent or reaching less than 0.7 the length of scutellum. Thorax usually with definite yellow markings. . . . . 2a. Subgenus ***Parapheltes***

3. Tribe ECLYTINI

Key to the genera of Eclytini

1. Lower tooth of mandible longer than upper tooth, the mandible when closed appearing to have a single long tooth because the upper tooth is hidden. Median 0.3 of clypeal margin truncate or concave. Glymma absent. . . . . 6. ***Atopotrophos***

   Lower tooth of mandible a little or much shorter than upper tooth, both teeth visible when the mandible is closed. Median 0.3 of clypeal margin truncate or convex. Glymma present. 2

2. Mandible rather strongly tapered apically, its lower tooth 0.2 to 0.33 as long as upper tooth. . . . . 4. ***Thymaris***

   Mandible weakly tapered apically, its lower tooth 0.5 to 0.95 as long as upper tooth. 3

3. Clypeus very large, 0.8 to 1.2 as wide as long, in the female produced medially and with a groove running from the center ventrolaterally to the base of mandible, in the male simply convex. . . . . 5. ***Oedemopsis***

   Clypeus moderately large, 1.7 to 2.2 as wide as long, simply convex in both sexes. 4

4. Tergites II to IV with coarse dense punctures. Face raised medially. Eye inconspicuously hairy. . . . . 3. ***Neliopisthus***

Tergites II to IV with fine inconspicuous punctures or almost impunctate. Face evenly convex. Eye bare. 5

5. Median 0.3 of clypeal margin without hairs. Clypeus about 2.1 as wide as long. Areolet present or absent (present in the Taiwan species). Ovipositor 0.6 to 0.9 as long as apical depth of abdomen. ..... 1. ***Eclytus***

Median 0.3 of clypeal margin with a fringe of long parallel hairs. Clypeus about 1.85 as wide as long. Areolet absent. Ovipositor about 2.0 as long as apical depth of abdomen. ..... 2. ***Hercus***

4. Tribe **TRYPHONINI**

Key to the genera of Tryphonini

1. Second recurrent vein with a strong zig-zag. Frons with median horn or nipple. Abdomen black and yellow. ..... 6. ***Cosmoconus***

Second recurrent vein usually without a strong zig-zag, when with a strong zig-zag then either the tarsal claws distinctly pectinate and/or the areolet absent. Frons without a median horn or nipple. 2

2. Areolet rhombic, wider than high, the first and second intercubiti of nearly equal length and equidistant from second recurrent. Back of head, as seen from above often with a median notch. Tarsal claws simple. ..... 5. ***Dyspetes***

Areolet present or absent, when present oblique and subtriangular, the second intercubitus longer than the first intercubitus and closer to second recurrent vein. Back of head without a notch. Tarsal claws usually pectinate. 3

3. Areolet absent. Tarsal claws not pectinate to the apex. Tergite I very narrow. ..... 4. ***Lagoleptus***

Areolet present or absent, when absent the tarsal claws pectinate to the apex. Tergite I not narrow. 4

4. Lower articulation point of the 2 mandibles not farther apart than the inner margins of eyes at level of clypeal foveae. Outer face of mandible at its basal 0.2 strongly convex in cross section, with only small inconspicuous punctures. Ovipositor decurved, its sheath broad. ..... 2. ***Ctenochira***

Lower articulation point of the 2 mandibles farther apart than inner margins of eyes at level of clypeal foveae. Outer face of mandible at its basal 0.2 weakly convex or concave, with rather large punctures. Ovipositor usually straight, its sheath narrow. 5

5. Costula usually present, when present joining petiolar area near its top. Ovipositor with a blunt point. ..... 1. ***Polyblastus*** (subgenus *Cophenchus*)

Costula present or absent, when present joining areola. Ovipositor with a sharp point. 6

6. Epipleura of tergites II and III moderately wide. Tarsal claws pectinate nearly or quite to the apex. Tergite II without a transverse shallow impression. Malar space less than 0.3 as long as basal width of mandible. Ovipositor usually carrying a number of eggs. ..... 1. ***Polyblastus*** (except the subgenus *Cophenchus*)

Epipleura of tergites II and III very narrow and indistinct. Tarsal claws pectinate on at most their basal 0.7. Ovipositor carrying only one egg at a time, usually without an egg. ..... 3. ***Otoblastus***

(1) Genus POLYBLASTUS

Key to the subgenera of Polyblastus

1. Areolet absent. Eggs infuscate. . . . . 1b. Subgenus ***Labroctonus***
   Areolet present. Eggs whitish. 2
2. Costula joining the combined areola and basal area. Ovipositor with a sharp point. . . . . 1a. Subgenus ***Polyblastus***
   Costula joining the petiolar area near its base. Ovipositor with a blunt point. . . . . 1c. Subgenus ***Cophenchus***

5. Tribe CTENISCINI

Key to the genera of Cteniscini

1. Apex of hind tibia, as seen from the hind side, approximately truncate so that its lower corner is approximately a right angle. Hind tibia with an apical fringe of long, close hairs on its inner side and a flat polished area on the lower part of its apex. Slender species. 2
   Apex of hind tibia, as seen from the hind side, rounded off ventrally so that its lower corner is not angulate. Hind tibia with an apical fringe of shorter, sparser hairs on its inner side and without a distinct flat area on the lower part of its apex. Stouter species. 4
2. Lower tooth of mandible not larger than upper tooth. Dorsolateral carina of tergite I passing just above the spiracle. Notaulus moderately sharp. . . . . 1. ***Orthomiscus***
   Lower tooth of mandible larger than upper tooth. Dorsolateral carina of tergite I passing through the spiracle. Notaulus sharp, weak, or absent. 3
3. Tergite I with a glymma. Notaulus sharp, weak, or absent. . . . . 2. ***Kristotomus***
   Tergite I without a glymma. Notaulus absent. . . . . 3. ***Kerrichia***
4. Punctures on abdominal tergites fine and weak. Tergite I without laterobasal corners, gradually tapered from apex to base. . . . . 4. ***Eridolius***
   Punctures on abdominal tergites coarse and strong. Tergite I with laterobasal corners, rather gradually tapered from apex to laterobasal corners, then abruptly to the base. . . . . 5. ***Exenterus***

Subfamily EUCEROTINAE

This subfamily contains only the genus ***Euceros.***

Subfamily LABIINAE

Brachycyrtus is the only genus known from Taiwan.

Subfamily ADELOGNATHINAE

This subfamily contains only the genus ***Adelognathus.***

Subfamily XORIDINAE

Key to the genera of Xoridinae

1. Hind femur with a tooth beneath. Mandible normally with 2 subequal teeth. Epomia absent

or short and weak, not projecting dorsally. Female flagellum not specialized subapically as described below. . . . . 1. ***Odontocolon***

Hind femur without a tooth beneath. Mandible without two teeth, its apex chisel-shaped. Epomia long and strong, usually projecting dorsally as a tooth. Female flagellum curved or elbowed subapically, at the curve or elbow with 1, 2, or a series of peglike setae. . . . . 2. ***Xorides***

Subfamily AGRIOTYPINAE

Agriotypus is the only genus known from Taiwan.

Subfamily GELINAE

Key to the tribes of Gelinae

1. Wings absent or vestigial, front wing shorter than thorax. . . . . 1. **Gelini** (a few species)
   Wings fully developed, front wing longer than thorax. 2
2. Second recurrent vein with 2 bullae or sometimes with 1, nearly always sloping outward posteriorly so that posterodistal corner of second discoidal cell somewhat longer and more pointed than anterodistal corner (in the few cases when second rucurrent vein is vertical and with a single bulla, sternaulus reaches hind edge of mesopleurum a little above its lower hind corner, and/or the apical truncation of the scape is only moderately oblique). Face of male rarely marked with white or yellow. Propodeum usually areolated, with longitudinal as well as transverse carinae. . . . . 1. **Gelini** (most species)
   Second recurrent vein with a single bulla, usually not sloping outward posteriorly and usually meeting subdiscoidal vein at a right angle. Sternaulus, when it reaches hind edge of mesopleurum, ending just below lower hind corner of mesopleurum. Apical truncation of scape strongly oblique. Face of male frequently marked with white or yellow. 3
3. Dorsal rim of metanotum with a posterior, sublateral, triangular projection, this projection opposite front end of sublateral longitudinal carina of propodeum (which is nearly always present). Propodeum with longitudinal carinae as well as transverse carinae, or in some females only transverse carinae present but in these the basal transverse carina is weak or absent and the apical transverse carina strong. . . . . 2. **Echthrini**
   Dorsal rim of metanotum without a posterior sublateral projection (though sometimes there is such a projection just below the dorsal rim). Propodeum without longitudinal carinae (except often on each side of the median basal area). If only one transverse propodeal carina is present, it is the basal carina rather than the apical one. . . . . 3. **Mesostenini**

1. Tribe GELINI

Key to the genera of Gelini

1. Wings absent, or front wing shorter than its thorax. 2
   Wings present and well developed. 3
2. Wings absent. Tergites II and III separated. . . . . 22. ***Gelis*** (a few species, especially females)
   Wings present but small. Tergites II and III fused, the combined tergites very large and with 2 pairs of spiracles. . . . . 18. ***Polyaulon*** (females of one species)

3. Areola of propodeum joined with petiolar area to form a long narrow area occupying most of the length of propodeum. 4
   Areola of propodeum separated from petiolar area by a carina, or sometimes the areola not distinctly defined. 7
4. Nervellus not intercepted, discoidella completely absent. Apex of clypeus with a median point. . . . . 52. ***Cremnodes***
   Nervellus intercepted, discoidella distinct or faint but always present. Apex of clypeus sometimes with a weak median angulation but not a point. 5
5. Abdomen depressed, the part beyond first segment 1.25 to 2.75 as long as wide. Tergite II without a lateral crease separating epipleurum. Clypeus almost flat. Genal carina reaching mandible. . . . . 49. ***Stilpnus***
   Abdomen depressed or compressed, the part beyond first segment 2.8 to 11.0 as long as wide. Tergite II nearly always with a partial to complete lateral crease separating epipleurum, the lateral crease often confined to basal part of the tergite. Clypeus moderately convex. Genal carina either joining oral carina or reaching mandible. 6
6. First abdominal segment straight from base to a little behind spiracle. Lateral crease of tergite II extending from base to apex of the tergite. Abdomen of female depressed, or cylindric. . . . . 50. ***Mesoleptus***
   First abdominal segment decurved near spiracle. Lateral crease of tergite II extending from base to near middle of the tergite, somewhat shorter, or rarely absent. Abdomen of female compressed. . . . . 51. ***Atractodes***
7. Nervellus not intercepted, discoidella completely absent. 8
   Nervellus intercepted, discoidella faint to very distinct. 11
8. Notaulus long and sharp, reaching nearly to hind edge of mesoscutum. . . . . 38. ***Bathythrix*** (some species)
   Notaulus short or absent. 9
9. Apical part of clypeus bent sharply inward so that clypeus is short and appears broadly truncate. Upper side of pronotum with a strong median longitudinal ridge. Epipleurum of tergite II separated by a crease. . . . . 15. ***Lysibia***
   Apical part of clypeus not bent sharply inward. Upper side of pronotum without a median longitudinal ridge. Epipleurum of tergite II not separated by a crease. 10
10. First intercubital vein moderately long. Female with tergites II and III separated. . . . . 17. ***Aclastus***
    First intercubital vein absent or very short because radial and cubital veins touch or almost touch. Female with tergites II and III fused together, making a large composite tergite with 2 pairs of spiracles. . . . . 18. ***Polyaulon***
11. Posterior mesosternal carina complete, not interrupted in front of each middle coxa. 12
    Posterior mesosternal carina incomplete, narrowly to widely interrupted in front of each middle coxa. 22
12. Areolet present. 13
    Areolet absent. 15
13. Spiracles of abdominal segments II and III on the epipleura, on the under side of abdomen. Mandible strongly swollen next to base. . . . . 24. ***Agasthenes***
    Spiracles of abdominal segments II and III on the tergites, on the upper side of the abdomen. Mandible not strongly swollen next to base. 14

14. Notaulus long and sharp, reaching to near hind edge of mesoscutum. Propodeum without a pair of prominent teeth. . . . . 38. ***Bathythrix*** (one species)
Notaulus short or absent, if present not reaching to center of mesoscutum. Propodeum with a pair of prominent teeth. . . . . 30. ***Hyparcha***
15. Side edge of tergites II and III somewhat rounded, not separated from their epipleura by a crease. Scutellum without a lateral carina except at front lateral corner. . . . . 1. ***Handaoia***
Side edge of tergites II and III sharp, separated from their epipleura by a crease. Scutellum usually with a lateral carina on its front 0.25 or more. 16
16. Propodeum long and sloping with only the petiolar area defined. Ovipositor unusually slender. . . . . 2. ***Palpostilpnus***
Propodeum normal shape, not long and sloping, with several areas defined. Ovipositor not unusually slender. 17
17. Lower tooth of mandible approximately as long as upper tooth. Sternaulus not abruptly weaker half way to the middle coxa, usually distinct to near the middle coxa. Sternite I without a preapical transverse carina. Disc of scutellum and upper part of temple usually smooth. Epipleurum of tergite IV not folded under. 18
Lower tooth of mandible much shorter than upper tooth, the upper tooth always pointed. Sternaulus abruptly weaker half way to the middle coxa, not or indistinctly continued beyond this point. Sternite I usually with a preapical transverse carina. Disc of scutellum and upper part of temple usually coarsely punctate or rugoso-punctate. Epipleurum of tergites II–IV of female sharply folded under. 19
18. Center of face rather flat, convex or moderately raised. Areola shorter, usually not confluent with basal area. Apex of clypeus subtruncate to moderately convex. Malar space rather short to moderately long. Intercubitus moderately short. Ovipositor sheath about 0.3 to 0.6 as long as front wing, rarely longer. . . . . 3. ***Paraphylax***
Center of face raised into a tubercle. Areola long and narrow, usually confluent with basal area. Apex of clypeus rather strongly convex. Malar space long. Intercubitus very short or obliterated. Ovipositor sheath about 0.75 as long as front wing. . . . . 4. ***Chirotica***
19. Tergites II and III without a strong transverse groove, sometimes with a weak transverse impression. Tergite I more slender, its median longitudinal carinae usually weak or absent. Sternite I about 3.5 as long as wide. 20
Tergites II and III with a strong transverse groove (straight, arched or v-shaped). Tergite I stout, its median longitudinal carinae strong. Sternite I about 2.2 as long as wide. 21
20. Petiolar area of propodeum when defined occupying 0.4 to 0.6 the length of propodeum. Areola when defined longer than wide. Tip of upper valve of ovipositor smooth. . . . . 5. ***Bentyra***
Petiolar area of propodeum defined and occupying about 0.8 the length of propodeum. Areola several times as wide as long. Tip of upper valve of ovipositor with weak teeth. . . . . 6. ***Orientohemiteles***
21. Tergite III of male without an apicolateral spine. Tergites IV and V of male projecting well beyond tergite III. Tergite V of female mostly exposed. . . . . 7. ***Caenopimpla***
Tergite III of male with an apicolateral spine. Tergites IV and V of male not or hardly projecting beyond tergite III. Tergite V of female usually retracted beneath tergite IV. . . . . 8. ***Astomaspis***
22. Upper side of pronotum, just behind collar, with a strong but short, median longitudinal ridge

or carina crossing the transverse sulcus. Basal section of lateral longitudinal carina of propodeum (the section just above the spiracle) usually absent. Clypeus without a median apical tooth or pair of teeth. 23

Upper side of collar of pronotum without a strong median longitudinal ridge, but sometimes with a median carina or wrinkle that is not much stronger than the surrounding carinae or wrinkles. Basal section of lateral longitudinal carina of propodeum (just above the spiracle) usually present. Clypeus often with a median apical tooth or pair of teeth. 28

23. Lateral edge of tergites II and III sharply rounded, not separated from epipleura by a crease. Mesoscutum polished, without punctures. Notaulus long. . . . . 11. ***Diatora***

Lateral edge of tergites II and III sharp, separated from epipleura by a crease. Mesoscutum mat to polished, more or less punctate or mat. Notaulus short to long, or sometimes absent. 24

24. Mesoscutum partly to entirely polished. 25

Mesoscutum entirely mat. 26

25. Ovipositor tip with a distinctly raised nodus. Lower valve of ovipositor tip not enclosing upper valve. Body shorter and less cylindric. . . . . 9. ***Encrateola***

Ovipositor tip without a nodus. Lower valve of ovipositor tip partly enclosing upper valve. Body long and cylindric. . . . . 10. ***Micraris***

26. Apical 0.3 of clypeus strongly curved inward and with a thin brush of long hairs. Propodeal spiracle touching pleural carina or separated from pleural carina by not more than diameter of spiracle. . . . . .14. ***Diaglyptidea***

Apical 0.3 of clypeus not strongly curved inward and without a brush of hairs. Propodeal spiracle separated from pleural carina by at least its diameter. 27

27. Tergites II and III without a postmedian transverse groove. Clypeus usually with a narrow bevel next to apical margin and its lower edge truncate. . . . . 12. ***Acrolyta***

Tergites II and III with a strong postmedian transverse groove. Clypeus not beveled next to apical margin, and its lower edge convex. . . . . 13. ***Diaglyptella***

28. Side edge of tergite II joining its epipleurum without a crease, curved over to the under side without an interruption. Mesoscutum mat. Areolet absent. . . . . .16. ***Hemiteles***

Side edge of tergite II folded under, or at least creased where it joins its epipleurum. Mesoscutum mat to polished. Areolet absent or present. 29

29. Outer face of mandible with a strong swelling next to base, at the extreme base with a transverse groove which emphasizes the swelling. 30

Outer face of mandible with a weak swelling next to base, or without a swelling. 34

30. Upper profile of propodeum strongly oblique, almost flat. Apical area of propodeum, when defined, narrow and covering more than 0.6 the length of posterodorsal profile of propodeum. Ovipositor very slender. . . . . 23. ***Townostilpnus***

Upper profile of propodeum less oblique, convex or broken into subdorsal and posterodorsal faces. Apical area of propodeum, when defined, shorter than 0.6 the length of the dorsal and posterodorsal profile of propodeum (except in *Dichrogaster*). Ovipositor stouter. . . .31

31. Clypeus very small, weakly convex or almost flat. Propodeum very short, its areola defined by sharp carinae and about 3.0 as wide as long. . . . . .21. ***Dichrogaster***

Clypeus usually larger, more convex. Propodeum longer, its areola, if defined, usually less than 1.5 as wide as long. 32

32. Epomia absent or short and weak. Second intercubitus absent or weak. Mesopleurum usually

mat, with or without punctures or wrinkling. . . . . 22. ***Gelis***

Epomia moderately strong. Second intercubitus weak to moderately strong. Mesopleurum polished, variously wrinkled and punctate. 33

33. Apical margin of clypeus with 2 median teeth that may be strong or very weak. Sternaulus usually reaching more than 0.5 the length of mesopleurum. . . . . 19. ***Formocryptus***

Apical margin of clypeus without teeth. Sternaulus about 0.3 as long as mesopleurum. . . . . 20. ***Xenolytus***

34. Apex of clypeus impressed next to the margin, the margin thin, without a median tooth or angle. Apical truncation of scape very oblique, about 50° from the transverse. Areola much wider than long, small. Ovipositor tip short, compressed, somewhat decurved, and with a nodus. 35

Apex of clypeus not entirely as above, usually the margin thick and/or with a median tooth, pair of teeth, or angle. Apical truncation of scape almost transverse to very oblique. Areola usually about as long as wide or longer than wide. Ovipositor tip various. 36

35. Second intercubitus present. Median dorsal carinae of tergite I strong, reaching at least to center of postpetiole. . . . . 28. ***Ethelurgus***

Second intercubitus absent or faint. Median dorsal carinae of tergite I weak, not reaching beyond base of postpetiole. . . . . 29. ***Apoglutus***

36. Nervellus vertical, weakly inclivous, or reclivous. 37

Nervellus distinctly inclivous. (some species or genera are more or less intermediate on this character and might need to be tried through both halves of the couplet). 46

37. Abdominal tergite I slender to very slender, its sternite ending a little to far behind spiracle, its spiracle near or in front of the midlength. Apical truncation of scape 10° to 45° from the transverse. 38

Abdominal tergite I slender to quite stout, its sternite ending before, near, or a little behind spiracle, its spiracle usually behind the midlength. Apical truncation of scape 20° to 60° from the transverse. 40

38. Notaulus long, reaching to center of mesoscutum or beyond. Tergite I usually with longitudinal carinae. . . . . 38. ***Bathythrix*** (most species)

Notaulus short or absent, not reaching to center of mesoscutum. Tergite I usually without longitudinal carinae. 39

39. Propodeum without projections. Second recurrent vein inclivous, with 2 bullae. First abdominal segment arched. . . . . 39. ***Retalia***

Propodeum with several strong projections. Second recurrent vein vertical, with 1 bulla. First abdominal segment straight. . . . . 40. ***Apophysius***

40. Dorsal face of propodeum long, with the apical transverse carina strong. Areola distinctly longer than wide (the areola and basal area often confluent). Lower tooth of mandible at least 0.8 as long as upper tooth. . . . . 41. ***Orthizema***

Dorsal face of propodeum not unusually long, with apical transverse carina usually weaker. Areola usually not longer than wide. Lower tooth of mandible usually less than 0.8 as long as upper tooth. 41

41. Apical margin of clypeus with neither a median pair of teeth nor a single tooth. 42

Apical margin of clypeus with a median pair of small teeth or a single tooth. 43

42. Occipital carina joining oral carina at base of mandible. . . . . 42. ***Uchidella***

Occipital carina joining oral carina above base of mandible. . . . . 44. ***Stibeutes***

43. Apical margin of clypeus with a median single tooth. Malar space longer than basal width of mandible. Ovipositor short, not reaching distinctly beyond apex of abdomen. Teeth of mandible blunt. ..... 48. ***Ceratophygadeuon***
Apical margin of clypeus with a pair of median small teeth or tubercles. Malar space often shorter than basal width of mandible. Ovipositor reaching distinctly beyond apex of abdomen. Teeth of mandible moderately long and moderately sharp. 44
44. Apical truncation of scape about 60° from the transverse. Ovipositor sheath about 0.45 as long as front wing. Malar space 0.8 to 1.4 as long as basal width of mandible. ..... 45. ***Theroscopus***
Apical truncation of scape about 20° to 50° from the transverse. Ovipositor sheath 0.1 to 0.4 as long as front wing. Malar space usually shorter than basal width of mandible. 45
45. Clypeus without a distinct separation from face, broadly lenticular in shape. Clypeal fovea in the form of a moderate sized pit. Ovipositor sheath about 0.35 as long as front wing. ..... 46. ***Megacara***
Clypeus separated from face by a distinct groove. Clypeal fovea less distinct, in the form of a smaller or shallower pit. Ovipositor sheath 0.1 to 0.2 as long as front wing. ..... 47. ***Phygadeuon***
46. Scutellum with a lateral carina for more than half its length. Apical truncation of scape strongly oblique, 40° to 65° from the transverse. 47
Scutellum without a lateral carina except at its basal corner. Apical truncation of scape almost transverse to strongly oblique. 50
47. Second recurrent vein with 2 bullae. ..... 43. ***Gnotus***
Second recurrent vein with 1 bulla. 48
48. Tergites II and III fused. Tergite III with a pair of teeth at apex. Tergite IV and following tergites retracted under tergite III. ..... 31. ***Rothneyia***
Targites II and III not fused. Tergite III without a pair of teeth at apex. Tergite IV and following tergites not retracted under tergite III. 49
49. Notaulus fading out near center of mesoscutum. Propodeum with tooth-like apophyses. Median 0.4 of clypeal margin weakly convex. ..... 30. ***Hyparcha***
Notaulus reaching beyond center of mesoscutum and joining together posteriorly. Propodeum without distinct apophyses. Median 0.4 of clypeal margin truncate. ..... 32. ***Nipponaetes***
50. Apical truncation of scape strongly oblique, 50° to 70° from the transverse. Apex of clypeus usually with a median angulation, or a tooth, or a pair of teeth. Ovipositor tip rather short, usually with a nodus. 51
Apical truncation of scape weakly oblique or almost transverse, 5° to 30° from the transverse. Apex of clypeus without a median angulation or tooth. Ovipositor tip elongate, without a nodus or with a weak nodus. 53
51. Second recurrent vein with 1 bulla. Lower edge of mandible rounded. Hairs on outer face of mandible dense and short. ..... 27. ***Lochetica***
Second recurrent vein with 2 bullae. Lower edge of mandible carinate or angled. Hairs on outer face of mandible not exceptionally dense and short. 52
52. Epipleurum of tergite II moderately wide, about 1.5 to 5.0 as long as wide. Front wing 2.8 to 6 mm. long. Clypeus usually with a pair of distinct median apical teeth. ..... 25. ***Mastrus***
Epipleurum of tergite II narrow, about 6.0 as long as wide. Front wing 2.0 to 4.5 mm. long. Clypeus small, broadly lenticular, moderately convex, sometimes with a pair of median

apical small teeth. . . . . 26. ***Indovia***

53. Second recurrent vein strongly inclivous, usually with 2 bullae. . . . . 33. ***Charitopes***
Second recurrent vein weakly inclivous or vertical, with 1 or 2 bullae. 54

54. Hind edge of mesoscutum without a transverse break. Prescutellar transverse groove without a median longitudinal ridge. 55
Hind edge of mesoscutum with a transverse break just in front of the prescutellar transverse groove. Prescutellar transverse groove usually with a strong median longitudinal ridge that divides the groove into 2 halves. 56

55. Second intercubital vein present. Areola wider than long. Punctures on temple not dense. . . . . 34. ***Medophron***
Second intercubital vein entirely absent. Areola longer than wide. Punctures on temple often dense and coarse, especially in female. . . . . 35. ***Cisaris***

56. Median dorsal carinae of tergite I strong, at least in front of spiracle. Prescutellar transverse groove with a strong median longitudinal carina. . . . . 36. ***Endasys***
Median dorsal carinae of tergite I weak or absent. Prescutellar transverse groove usually without a strong median longitudinal carina. . . . . 37. ***Coptomystax***

2. Tribe **ECHTHRINI**

Key to the genera of Echthrini

1. Upper valve of ovipositor tip with strong oblique or transverse teeth. Propodeum very short, its median apical area 0.65 to 0.75 as long as the areola plus median basal area. Mandible short and subtriangular, its lower tooth faintly to definitely shorter than upper tooth. Propodeal spiracle elongate. 2
Upper valve of ovipositor tip smooth, or rarely with minute or faint ripple-like teeth along its dorsal edge. Propodeum usually longer, its median apical area usually less than 0.65 as long as areola plus median basal area. Mandible more slender, its lower tooth as long as, or longer than upper tooth except in *Platymystax*. Propodeal spiracle circular to elongate. 4

2. Tergites II and III fused together to form a structure like a tube upside down. Second intercubital vein lacking. . . . . 3. ***Hemigaster***
Tergites II and III not fused. Second intercubital vein present. 3

3. First intercubital vein approximately vertical, subparallel to second intercubital vein. Areolet 0.8 to 1.3 as wide as high. Notaulus short but rather sharp. Temple moderately wide. Areola usually distinct. . . . . 1. ***Litochila***
First intercubital vein strongly inclivous (its front end basad of its hind end), divergent from second intercubital vein. Areolet about 1.5 as wide as high. Notaulus absent. Temple rather narrow. Areola usually indistinct or not defined. . . . . 2. ***Mansa***

4. Lower tooth of mandible much shorter than upper tooth. . . . . 4. ***Platymystax***
Lower tooth of mandible approximately as long as upper tooth, or longer. 5

5. Lower tooth of mandible distinctly longer than upper tooth. 6
Lower tooth of mandible almost the same length as upper tooth, or a little shorter. 8

6. Propodeal spiracle a little closer to pleural than to sublateral carina, or equidistant. Female flagellum more or less tapered toward apex, weakly to strongly flattened below. . . . . 11. ***Giraudia***

Propodeal spiracle a little farther from pleural than from sublateral carina. Female flagellum blunt at tip or rarely weakly tapered, usually cylindric but rarely weakly flattened below. 7

7. Intercubiti subparallel. Male postpetiole with its dorsolateral edge rounded or weakly margined. Female postpetiole with its upper face flat near lateral edge. Clypeus in profile highest just below the middle, apical 0.35 ± impressed. ..... 9. ***Aconias***

Intercubiti convergent forward. Male postpetiole with its dorsolateral edge strongly margined. Female postpetiole with a weak lateral ridge on its upper face (this is a dorsal projection of dorsolateral carina). Clypeus in profile moderately convex, its highest point near the middle. ..... 10. ***Plectocryptus***

8. Spiracle of tergite I at the midlength. Nervellus intercepted usually above the middle. Clypeus usually with a median apical tooth. Front tibia of female strongly inflated. ..... 7. ***Echthrus***

Spiracle of tergite I behind the midlength. Nervellus intercepted below the middle. Clypeus usually without a median apical tooth. Front tibia of female not inflated. 9

9. Propodeal spiracle at least 3.0 as long as wide. Dorsolateral edge of postpetiole mostly or entirely rounded. ..... 8. ***Polytribax***

Propodeal spiracle at most 2.0 as long as wide, usually subcircular. Dorsolateral edge of postpetiole usually margined but sometimes rounded. 10

10. Apical half of female flagellum strongly flattened below and strongly tapered to apex. Upper face of propodeum long, its median carinae subparallel, bounding an elongate subrectangular area (or the median carinae sometimes lacking). Sternaulus about 0.3 to 0.6 as long as mesopleurum. ..... 12. ***Schenkia***

Apical half of female flagellum cylindric or weakly flattened below, not strongly tapered to apex. Upper face of propodeum various, its median carinae usually less parallel and bounding a less elongate median area. Sternaulus at least 0.5 as long as mesopleurum. 11

11. Males. 12

Females. 14

12. Flagellum stout to slender, its second segment 1.3 to 4.0 as long as deep. Tergite II polished or mat. Clypeus 1.6 to 3.0 as wide as long. Areolet always pentagonal with its front side shorter than its mesal side. Propodeum short to long, its anterodorsal face often much shorter than its posterodorsal face. ..... 13. ***Aptesis***

Flagellum slender, its second segment 2.7 to 4.0 as long as deep. Tergite II usually mat. Clypeus about 2.1 as wide as long. Areolet quadrangular or pentagonal, with the front side often as wide, or wider than its mesal side. Propodeum rather long, its anterodorsal face about as long as its posterodorsal face. 13

13. Tergite I rather slender, usually about 3.5 as long as wide. Areolet pentagonal or quadrate, its sides subparallel or strongly convergent. ..... 5. ***Javra***

Tergite I moderately stout, about 2.4 as long as wide. Areolet quadrate, its sides parallel or weakly convergent. ..... 6. ***Parmortha***

14. Basal flagellar segments shorter, the second segment 1.3 to 3.2 as long as deep. Sternaulus usually not reaching hind edge of mesopleurum. Areolet always pentagonal. ..... 13. ***Aptesis***

Basal flagellar segments very long, the second segment 3.3 to 5.5 as long as deep. Sternaulus

usually long and reaching the hind edge of mesopleurum (though its posterior part weak). Areolet rectangular or pentagonal. Tergite II mat, densely or moderately sparsely haired. 15

15. Ovipositor straight. Intercubiti parallel or converging. ..... 5. ***Javra***
Ovipositor almost always weakly upcurved. Intercubiti parallel or almost parallel ..... 6. ***Parmortha***

3. Tribe **MESOSTENINI**

Key to the subtribes of Mesostenini

1. Mandible about 4.5 as long as its width at the middle, the upper tooth much longer than lower tooth, the lower tooth sometimes indistinct. Clypeus broad, its apex broadly truncate, concave, or very weakly convex, without a median tooth or lobe. Tergite I slender, only a little widened apically. ..... 9. **Nematopodiina**
Mandible 1.2 to 3.5 as long as its width at the middle, the upper tooth not, or only a little longer than lower tooth. Tergite I various, often strongly widened apically. 2
2. Tergites II–IV with a pair of large median impressions. Ovipositor reaching only to tip of abdomen. Female subgenital plate large, rhomboidal, weakly convex. Second intercubital vein absent, not present even as a trace. ..... 11. **Sphecophagina**
Tergites II–IV without a pair of large median impressions. Ovipositor nearly always reaching past tip of abdomen. Female subgenital plate not large and rhomboidal. Second intercubital vein usually present, at least as a trace. 3
3. Postpectal carina complete. 4
Postpectal carina incomplete, present only laterally or with an interruption in front of each middle coxa. 5
4. Lower tooth of mandible a little longer than upper tooth. Nervulus more or less distad of basal vein. Tergite I usually longitudinally striate. ..... 7. **Ateleutina**
Lower tooth of mandible equal to upper tooth or a little storter. Nervulus a little basad of basal vein. Tergite I not striate. ..... 1. **Agrothereutina** (genus *Amauromorpha*)
5. Spiracle of tergite I at, or close to the midlength, not behind apical 0.4 of the tergite. Tip of lower valve of ovipositor with a dorsal lobe that partly encloses tip of upper valve. Fourth segment of female front tarsus not, or weakly, bilobed (see from below). Tergite I without mediodorsal carinae. Lower tooth of mandible usually longer than upper tooth. ..... 10. **Gabuniina**
Spiracle of tergite I at, or behind apical 0.47 of the tergite, or other characters not entirely as above. Tip of lower valve of ovipositor without a dorsal lobe (except in *Xylophrurus* and *Kriegeria*). Fourth segment of female front tarsus usually deeply bilobed (see from below). Tergite I often with mediodorsal carinae. Lower tooth of mandible not, or rarely longer than upper tooth. 6
6. Upper valve of ovipositor tip with a series of teeth or transverse or oblique ridges, the ovipositor tip approximately cylindric. Mandible short, stout, strongly narrowed toward apex, the lower tooth distinctly shorter than upper tooth. ..... 3. **Baryceratina**
Upper valve of ovipositor tip without a series of teeth or transverse or oblique ridges, except in a few cases in which the ovipositor tip is strongly compressed. Mandible not exactly as above, usually longer, or less strongly tapered toward apex (or if strongly tapered, the

mandible weak), and usually the lower tooth only slightly shorter than upper tooth. 7

7. Apical 0.7 of mediella weakly to strongly arched. 8
   Apical 0.6 of mediella approximately straight. 14

8. Areolet medium-sized to large, always closed at apex, at least as high as the section of second recurrent vein above the bulla. 9
   Areolet medium sized to small or very small, often open at apex, not as high as the section of second recurrent vein above the bulla. 14

9. Mesopleural impression that is just below speculum in the form of a pit, the pit distant from mesopleural suture by about 2.0 the width of mesepimeron, often the pit connected with mesopleural sutrue by a relatively weak groove. . . . . 5. **Goryphina** (*Friona*, and *Buodias* in part)
   Mesopleural impression that is just below speculum in the form of a short horizontal groove, the groove 1.0 to 2.0 as long as width of mesepimeron, often the front end of groove deepened into a pit. 10

10. Hind rim of metanotum without a small angular or tooth-like widening just laterad of each side of postscutellum, or sometimes with a very small, faint tooth or widening. Transverse furrow at base of propodeum very shallow to moderately deep. Median part of propodeal slope just below postscutellum usually with strong vertical wrinkles. 11
    Hind rim of metanotum with a small angular or tooth-like widening, just laterad of each side of postscutellum, except in a few genera having transverse furrow at base of propodeum deep and narrow. Median part of propodeal slope just below postscutellum usually smooth. . . . 12

11. Areolet not, or only a little wider than high. Propodeum with both apical and transverse carinae complete and strong, between the carinae with a pair of median longitudinal swellings. Sternite I ending before midlength of its tergite. . . . . 6. **Coesulina**
    Areolet usually much wider than high. Propodeum not as above. Sternite I ending usually behind midlength of its tergite. . . . . 8. **Ceratocryptina**

12. Areolet about 1.5 as wide as high. Tergite I without median dorsal carinae or with traces of them in *Gotra*. Notaulus reaching to behind center of mesoscutum. Thyridium nearly always wider than long. . . . . 4. **Mesostenina**
    Areolet less than 1.4 as wide as high. Tergite I usually with at least a trace of the median dorsal carinae. Thyridium usually longer than wide in the genera that otherwise would agree with the above diagnosis of Mesostenina. 13

13. Front side of hind coxa with a basal short horizontal groove. Mesopleural impression just below speculum in the form of a short horizontal groove. . . . . 2. **Ischnina** (in part, including *Palmerella*)
    Front side of hind coxa without a basal short horizontal groove. Mesopleural impression just below speculum in the form of a pit, that may, or may not be connected with mesopleural suture by a short horizontal groove. . . . . 5. **Goryphina**

14. Mesosternum with median portion of postpectal carina present, moderately long, and straight. Sternaulus reaching about 0.6 the distance to middle coxa, weakly upcurved or almost straight. . . . . 1. **Agrothereutina** (except genus *Amauromorpha*)
    Mesosternum without the median section of postpectal carina, or if present it is short and v-shaped, or like a tubercle in the center of the median longitudinal groove of mesosternum. Sternaulus usually reaching almost or close to middle coxa, and sinuate. . . . . 2. **Ischnina** (in part)

(1) Subtribe AGROTHEREUTINA

Key to the genera of Agrothereutina

1. Mesoscutum rather strongly convex, usually moderately wide or narrow. Notaulus usually reaching beyond center of mesoscutum. Tergite II often mat, or distinctly punctate, or both mat and punctate. 2
   Mesoscutum rather weakly convex and broad. Notaulus usually absent or short, seldom reaching beyond center of mesoscutum. Tergite II usually polished and usually not conspicuously punctate. Thorax short and first abdominal segment long, the latter more than half as long as thorax. 6
2. Apex of clypeus truncate, without a median tooth, the clypeus strongly impressed subapically. Propodeum usually with a sublateral longitudinal carina or strong wrinkle between its 2 transverse carinae. Body very densely haired. 3
   Apex of clypeus more or less convex, with or without a median tooth or lobe. Propodeum without a sublateral longitudinal carina or wrinkle. Body not unusually densely haired. 4
3. Second intercubitus distinct. First intercubitus basad of second recurrent vein. . . 1. ***Apsilops***
   Second intercubitus lacking or very faint. First intercubitus opposite or distad of second recurrent vein. . . . . 2. ***Amauromorpha***
4. Sides of areolet parallel or weakly convergent, and the base of tergite I with a lateral triangular tooth (the tooth weak in male, stronger in female). . . . . 3. ***Agrothereutes***
   Sides of areolet definitely convergent forward, and/or the base of tergite I without a lateral triangular or subtriangular tooth. 5
5. Dorsolateral carina of tergite I usually distinct basad of spiracle. Second recurrent vein nearly straight or more or less sinuate, vertical or somewhat inclivous. Postpetiole rather weakly convex above. Ovipositor strongly compressed. . . . . 4. ***Aritranis***
   Dorsolateral carina of tergite I absent or indistinct just basad of spiracle. Second recurrent vein strongly sinuate and reclivous. Postpetiole strongly convex above. Ovipositor moderately compressed. . . . . 5. ***Pycnocryptus***
6. Dorsal end of prepectal carina at subtegular ridge. Nervulus opposite or basad of basal vein. Prepectus without a vertical carina opposite lower corner of pronotum. Epomia usually weak or absent. Ovipositor tip gradually tapered. . . . . 6. ***Idiolispa***
   Dorsal end of prepectal carina near middle of hind margin of pronotum. Nervulus opposite or distad of basal vein. Prepectus usually with a short vertical carina opposite lower corner of pronotum. Epomia usually strong. Ovipositor tip sagittate. . . . . 7. ***Trychosis***

(2) Subtribe ISCHNINA

Key to the genera of Ischnina

1. Color dark blue. Axillus vein weakly to strongly diverging from anal margin of hind wing, either distant from the anal margin and/or its tip slanted away from the margin. . . . . 12. ***Neodontocryptus***
   Color not blue. Axillus vein parallel to anal margin of hind wing, or close to the margin and its tip straight or curved toward the margin. 2
2. Base of tergite I with a lateral tooth that is sharp or at least from dorsal view it is angular or

sharply rounded, the tooth more distinct in females than in males. (*Glabridorsum* is variable in this character. It may be traced through either half of the couplet). 3

Base of tergite I without a lateral tooth but often with a narrow lateral flange at base which in dorsal view has a gently rounded profile. 6

3. Front side of areolet longer than outer side, the intercubiti subparallel. 4

Front side of areolet shorter than outer side, the intercubiti convergent. 5

4. Areolet large, about 0.33 to 0.6 as high as the length of second recurrent vein. Median section of postpectal carina very short or absent. Face with a median tubercle. . . . . 1. ***Etha***

Areolet small, about 0.15 as high as the length of second recurrent vein. Median section of postpectal carina long. Face without a median tubercle. . . . . 2. ***Palmerella***

5. Mesoscutum entirely mat and rather densely punctate. . . . . 4. ***Ischnus***

Mesoscutum mostly or entirely polished and impunctate. . . . . 5. ***Glabridorsum*** (in part)

6. Mesoscutum polished, not punctate. Mediella strongly arched. . . . . 5. ***Glabridorsum*** (in part)

Mesoscutum more or less mat and (or) punctate. Mediella weakly to moderately arched. . . . 7

7. Clypeus small, with a median apical tooth. Lower valve of ovipositor tip with a dorsal lobe that encloses upper valve. . . . . 9. ***Xylophrurus***

Clypeus medium sized to moderately large, without a median apical point, though sometimes with a weak median apical lobe. Lower valve of ovipositor tip without a dorsal lobe that encloses upper valve. 8

8. Propodeal spiracle circular or short elliptic. Subapical 0.6 of mediella weakly arched. Hairs on tergite II of female rather dense. 9

Propodeal spiracle short elliptic to elongate. Subapical 0.6 of mediella straight or almost so. Hairs on tergite II of female very sparse to rather dense. 11

9. Apical margin of clypeus with 2 small weak teeth at middle. Spiracle of tergite I almost at middle. . . . . 3. ***Dihelus***

Apical margin of clypeus without 2 teeth at middle. Spiracle of tergite I behind the middle. 10

10. Profile of clypeus subpyramidal. . . . . 6. ***Caenocryptus***

Profile of clypeus moderately convex. . . . . 7. ***Nippocryptus***

11. Tergite I very long and slender, its sternite reaching at least half the distance between spiracle and apex. Hairs on tergite II of female rather dense. Thyridium less than 0.6 as wide as long, or frequently absent. . . . . 11. ***Myrmeleonostenus***

Tergite I not so long and slender, its sternite seldom reaching to half the distance between spiracle and apex. Hairs on tergite II of female very sparse to moderately dense. Thyridium usually more than 0.6 as wide as long. 12

12. Frons with a pit dorsolaterad of each antennal socket. Second recurrent vein simply arched. Basal carina of propodeum weak or absent. . . . . 8. ***Buathra***

Frons without a distinct pit dorsolaterad of each antennal socket. Second recurrent vein simply arched or more or less distinctly sinuate. Basal carina of propodeum strong. . . . . 10. ***Hedycryptus***

(3) Subtribe BARYCERATINA

Key to the genera of Baryceratina

1. Mediella weakly arched to almost straight. Median portion of postpectal carina absent or

represented by a small median tubercle. Body color metallic blue or green. . . . . 3. ***Chlorocryptus***

Mediella moderately to strongly arched. Median portion of postpectal carina present. Body color not blue or green. 2

2. Upper edge of pronotum paralleled by a foveolate groove. Mesopleural fovea connected with mesopleural suture by a short deep groove. . . . . 1. ***Neoparacryptus***

Upper edge of pronotum rather evenly convex, not paralleled by a distinct groove. Mesopleural fovea connected with mesopleural suture by a shallow groove or not connected. . . . . 2. ***Buysmania***

(4) Subtribe MESOSTENINA

Key to the genera of Mesostenina

1. Petiole of first abdominal segment angled ventrolaterally, and usually also cornered by a ventrolateral longitudinal carina, at least its apical part with a ventrolateral carina or flange. . . . . 1. ***Gotra***

Petiole of first abdominal segment evenly rounded ventrolaterally. . . . . 2. ***Mesostenus***

(5) Subtribe GORYPHINA

Key to the genera of Goryphina

1. Tergite I without a lateral triangular tooth or flange at base. Petiole without a ventrolateral carina. . . . . 13. ***Hylophasma***

Tergite I with a lateral triangular tooth or flange at base, this projection weaker and often indistinct in male, distinct in female. Petiole with or without a ventrolateral carina. 2

2. First abdominal segment without longitudinal carinae or ridges, its spiracle near the apical 0.47. Propodeum about 1.2 as long as wide, the area behind basal carina polished or subpolished and usually covered with regular transverse wrinkles. Apical carina of propodeum absent or blunt and very close to apex. Areolet medium sized, about 1.4 as wide as high. . . . . 4. ***Friona***

First abdominal segment either with longitudinal carinae or ridges and/or its spiracle behind the apical 0.45. Propodeum usually less than 1.0 as long as wide, the area behind basal carina usually mat and/or punctate, sometimes with irregular wrinkles. Areolet usually less than 1.4 as wide as high. 3

3. Epomia absent, weak, or moderately strong, when present divergent abruptly from swollen front margin of pronotum, this swelling continued dorsad of juncture with epomia in essentially undiminished strength, the hind margin of the swelling carinate or with a distinct ridge. Scutellum often with lateral carina on its basal 0.4 or more. (*Buodias* is variable or intermediate in the characters stated. It is traceable through either half of the couplet). 4

Epomia weak to strong, divergent gradually from swollen front margin of pronotum, the submarginal swelling absent or abruptly weaker dorsad of its juncture with epomia. Scutellum without lateral carina, or carina present only on its basal 0.35 or less. 7

4. Nervellus intercepted near its upper 0.37, strongly reclivous. . . . . 5. ***Menaforia***

Nervellus intercepted at or below its middle, subvertical or weakly reclivous. 5

5. Propodeal spiracle 2.5 to 4.0 as long as wide. Dorsal profile of ovipositor tip not angulate at nodus and evenly convex to apex. Lower valve of ovipositor tip with ridges only near apex. . . . . 1. ***Necolio***

Propodeal spiracle subcircular to 2.1 as long as wide. Dorsal profile of ovipositor tip nearly always angulate at nodus. 6

6. Median part of postpetiole with dense large punctures. Submedian and brachial cells of front wing with about as many hairs on lower side as on upper side. . . . . 2. ***Phaedraspis***

Median part of postpetiole with sparse large punctures or impunctate. Submedian and brachial cells of front wing with very few or no hairs on lower side. . . . . 3. ***Buodias*** (in part)

7. Frons with a median horn. Areolet small and square. . . . . 6. ***Listrognathus***

Frons without a median horn, or in *Isotima* sometimes with 2 horns (one above each antennal socket). Areolet various. 8

8. Frons with a semicircular carina above each antennal socket that encloses a shallow basin, the carinae in males often developed or specialized into flanges or horns. Brachiella present or absent. . . . . 9. ***Isotima***

Frons without a semicircular carina above each antennal socket. 9

9. Brachiella almost or entirely absent. Apical carina of propodeum present medially. . . . . 10. ***Baltazaria***

Brachiella present, reaching at least half the distance to wing margin. Apical carina of propodeum often lacking medially. 10

10. Lower tooth of mandible 0.2 to 0.6 as long as upper tooth, the mandible narrow at apex. Epomia usually reaching to near upper margin of pronotum and there turned mesad. Ovipositor slender, its tip rather long and gradually tapered. . . . . 11. ***Euchalinus***

Lower tooth of mandible at least two-thirds as long as upper tooth, the mandible moderately wide at apex. Epomia and ovipositor various. 11

11. Petiole of tergite I rounded ventrolaterally, without a longitudinal angulation or carina separating its lateral from its ventral surface. Sternaulus often not reaching to middle coxa. Ovipositor tip very long, with very weak and indistinct teeth. . . . . 12. ***Melcha***

Petiole of tergite I with a longitudinal angulation or carina separating its lateral from its ventral surface. Sternaulus reaching to middle coxa. Ovipositor tip short to moderately long, with distinct teeth. 12

12. Spiracle of tergite I at midlength or a very little behind. Nervellus intercepted nearly always above middle. Lower valve of ovipositor tip with a dorsal lobe that partly encloses tip of upper valve. . . . . 8. ***Kriegeria***

Spiracle of tergite I distinctly behind the midlength. Nervellus intercepted below middle. Lower valve of ovipositor tip without a dorsal lobe. 13

13. Median section of postpectal carina short and high, 0.3 to 0.5 as high as its basal width. Ovipositor tip long and slender, its dorsal profile concave or with decurved tip. Areolet only moderately small, and transversely oblong. . . . . 3. ***Buodias*** (in part)

Median section of postpectal carina wider and not so high, about 0.1 to 0.2 as high as its basal width. Ovipositor tip stouter and usually shorter, its dorsal profile straight or convex. Areolet small, quadrangular or pentagonal. . . . . 7. ***Goryphus***

(6) Subtribe COESULINA

Coesula is the only genus known from Taiwan.

(7) Subtribe ATELEUTINA

Ateleute is the only genus known from Taiwan.

(8) Subtribe CERATOCRYPTINA

Key to the genera of Ceratocryptina

1. Prepectus below lower corner of pronotum with a strong vertical carina or lamella. Upper 0.3 of temple moderately long. . . . . 1. ***Nematocryptus***
   Prepectus below lower corner of pronotum without a strong vertical carina or lamella. Upper 0.3 of temple very short. 2
2. Upper margin of pronotum not swollen or produced opposite front end of notaulus. . . . . 2. ***Fitatsia***
   Upper margin of pronotum strongly swollen or produced opposite front end of notaulus. . . 3
3. Malar space about 0.25 as long as basal width of mandible. Lower tooth of mandible almost as long as upper tooth. Hind tarsal claws of male with a median right-angle bend. . . . . 5. ***Silsila***
   Malar space more than 0.5 as long as basal width of mandible. Lower tooth of mandible distinctly shorter than upper tooth. Hind tarsal claws of male strongly curved. 4
4. Frons with a pair of median acute horns. Propodeum evenly tapered from near middle to a narrow apex. White marking on propodeum, when present, in the form of two lateral triangles that are separated by a median black stripe. Lower edge of mandible without a lobe. . . . . 3. ***Ceratocryptus***
   Frons without horns or with a single median horn. Propodeum broad apically. White marking on propodeum, when present, in the form of a broad, inverted T-shaped. Lower edge of mandible often with a small preapical lobe. . . . . 4. ***Thelodon***

(9) Subtribe NEMATOPODIINA

Key to the genera of Nematopodiina

1. Areolet large, 0.6 to 0.8 as high as the second recurrent vein is long. Fifth segment of hind tarsus usually with 4 enlarged median ventral bristles. . . . . 4. ***Acroricnus***
   Areolet small, less than 0.35 as high as the second recurrent vein is long. Fifth segment of hind tarsus without enlarged median ventral bristles. 2
2. Occipital carina entirely absent, or only its dorsal part present. Ovipositor tip compressed, without distinct teeth. . . . . 3. ***Nematopodius***
   Occipital carina complete. Ovipositor tip depressed or cylindric with distinct teeth. 3
3. Spiracle of tergite I near its apical 0.42. Apex of sternite I opposite spiracle. Ovipositor longer than body. Ovipositor tip not sinuate. . . . . 1. ***Stenarella***
   Spiracle of tergite I near its apical 0.46. Apex of sternite I far behind spiracle. Ovipositor 0.25 to 1.1 as long as body. Ovipositor tip sinuate. . . . . 2. ***Picardiella***

(10) Subtribe GABUNIINA

Key to the genera of Gabuniina

1. Pleural carina of propodeum present between basal transverse carina and hind coxa. 2

Pleural carina of propodeum absent between basal transverse carina and hind coxa. 3

2. Areolet moderately large. Base of tergite I without a lateral triangular tooth, but in some females with a small rounded lateral flange. Nervulus opposite basal vein. . . . . 1. ***Apocryptus***

Areolet small. Base of tergite I with a lateral triangular tooth, the tooth pointed and acute or subacute in females, blunt and often indistinct in males. Nervulus basad of basal vein by at least 0.3 its length. . . . . 2. ***Xoridesopus***

3. Tergite I without a lateral triangular tooth at base, though often in female with a low rounded flange. . . . . 7. ***Torbda***

Tergite I with a lateral triangular tooth at base, the tooth pointed in female, often blunt and indistinct in male. 4

4. Upper part of face with a blunt median horn. . . . . 4. ***Hadrocryptus***

Upper part of face without a median horn. 5

5. Clypeus with a median apical tooth. . . . . 3. ***Arhytis***

Clypeus without a median apical tooth. 6

6. Apical transverse carina of propodeum absent. Oral carina complete to the genal carina. . . . . 5. ***Schreineria***

Apical transverse carina of propodeum complete. Oral carina absent apically, not joining genal carina. . . . . 6. ***Eurycryptus***

(11) Subtribe **SPHECOPHAGINA**

Key to the genera of Sphecophagina

1. Intercubitus opposite second recurrent vein or a little basad. Apical transverse carina of propodeum absent. Notaulus rather sharp. . . . . 1. ***Arthula***

Intercubitus far distad of second recurrent vein. Apical transverse carina of propodeum complete or present laterally. Notaulus weak or absent. . . . . 2. ***Latibulus***

Subfamily **STILBOPINAE**

Stilbops is the only genus known from Taiwan.

Subfamily **BANCHINAE**

Key to the tribes of Banchinae

1. Tergites II to IV with a pair of median deep oblique grooves that converge anteriorly and diverge posteriorly. Nervellus intercepted near or below the middle. . . . . 1. **Glyptini**

Tergites II to IV without a pair of median oblique grooves that converge anteriorly and diverge posteriorly. Nervellus intercepted above, near, or below the middle. 2

2. Nervellus intercepted below middle. Second intercubitus sometimes lacking. Abdomen not compressed. Ovipositor long to moderately short. . . . . 2. **Lissonotini**

Nervellus intercepted far above middle. Second intercubitus always present. Abdomen somewhat compressed apically. Ovipositor short. . . . . 3. **Banchini**

1. Tribe **GLYPTINI**

Key to the genera of Glyptini

1. Areolet present. 2
   Areolet absent. 4
2. Malar space 0.5 to 0.8 as long as basal width of mandible. Abdominal attachment far above bases of hind coxae. Epomia long and strong. . . . . 3. ***Sachtlebenia***
   Malar space 1.4 to 2.5 as long as basal width of mandible. Abdominal attachment close to bases of hind coxae. Epomia absent or indistinct and like a short wrinkle. 3
3. Apex of clypeus with a notch at center. Nervellus intercepted near middle. Upper part of occipital carina complete. Exposed part of tergite V of female about 0.75 as long as tergite IV. . . . . 1. ***Teleutaea***
   Apex of clypeus without a notch at center. Nervellus intercepted near hind end. Upper part of occipital carina absent or weak. Exposed part of tergite V of female about 0.55 as long as tergite IV. . . . . 2. ***Zygoglypta***
4. Front tibial spur reaching to middle of front basitarsus or beyond. Genal carina with a strong sinuation that brings it out onto the malar space. Tergites II–IV sometimes with a long median longitudinal carina. . . . . 4. ***Apophua***
   Front tibial spur not reaching to middle of front basitarsus. Genal carina incurved, straight, or weakly sinuate, or absent. Tergites II–IV without a median longitudinal carina or with only a short one. . . . . 5. ***Glypta***

2. Tribe **LISSONOTINI**

Key to the genera of Lissonotini

1. Genal carina joining base of mandible. Epomia usually present. Propodeal spiracle elongate. . . . . 6. ***Syzeuctus***
   Genal carina joining oral carina. Epomia usually absent. Propodeal spiracle circular to elongate. 2
2. Tergite I with basal half slender and lacking glymma, its spiracle at, or behind middle. Occipital carina not complete dorsally across the midline. Propodeum lacking apical and pleural carinae. Propodeal spiracle elongate. . . . . 5. ***Leptobatopsis***
   Tergite I with basal half stout to moderately slender, usually with glymma, its spiracle in front of middle. Occipital carina usually complete dorsally across the midline. Propodeum usually with either apical carina or pleural carina, or with both. Propodeal spiracle circular to elongate. 3
3. Tergite I evenly and rather strongly narrowed toward base. Areolet present. Speculum punctate all over. Ovipositor sheath less than 1.4 as long as hind tibia. 4
   Tergite I less strongly narrowed toward base, usually with a rather abrupt constriction at base. Speculum usually partly impunctate. Areolet present or absent. Ovipositor sheath often more than 1.4 as long as hind tibia. 5
4. Mesoscutum with a slightly raised, white, subtriangular anterolateral area (on each side). Apical and pleural carinae of propodeum absent. . . . . 2. ***Stictolissonota***
   Mesoscutum without a raised anterolateral area on each side. Apical and/or pleural carina of propodeum usually present. . . . . 3. ***Cryptopimpla***

5. Occipital carina complete above. Ovipositor sheath 1.8 to 3.8 as long as hind tibia. . . . . 1. ***Lissonota***

Occipital carina broadly interrupted above. Ovipositor sheath 0.8 to 1.4 as long as hind tibia. . . . . 4. ***Tossinola***

3. Tribe **BANCHINI**

Exetastes is the only genus known from Taiwan.

Subfamily **SCOLOBATINAE**

Key to the tribes of Scolobatinae

1. Median part of base of propodeum descending subvertically so that there is a deep U-shaped notch between the prominent basal ends of median longitudinal carinae and hind side of postscutellum. Basal end of lateral longitudinal carina of propodeum usually separated from the opposing sublateral projection of hind rim of metanotum by a deep U-shaped notch. (Propodeum of *Asthenara* agrees with second half of couplet. It may be keyed through either half). Ovipositor very slender except at the base, upcurved or sometimes straight or decurved, never with a dorsal subapical notch, or in Olethrodotini, the ovipositor extending far beyond apex of abdomen, moderately stout, and with the notch. Clypeal fovea usually open. Thyridium absent. 2

   Median part of base of propodeum sloping downward at an angle to form a v-shaped notch with the hind side of postscutellum. Basal end of lateral longitudinal carina of propodeum (if present) separated from the opposing sublateral projection of hind rim of metanotum (if present) by a v-shaped notch. Ovipositor usually moderately thick but sometimes slender, straight, usually with a dorsal subapical notch. Clypeal fovea usually closed. Thyridium present or absent. 3

2. Ovipositor about as long as abdomen, moderately stout, and with a subapical dorsal notch. Eye surface with sparse hairs. Eyes strongly convergent ventrad. . . . . 1. **Olethrodotini**

   Ovipositor much shorter than abdomen. Its apical part very slender and without a subapical dorsal notch. Eye surface bare. Eyes not strongly convergent. . . . . 2. **Pionini**

3. Tarsal claws usually pectinate. Upper end of prepectal carina distant from front edge of mesopleurum. Costula often present. Glymma present. First flagellar segment 1.0 to 2.0 as long as second. Cercus usually 2.5 to 3.0 as long as wide but sometimes shorter. Apex of membranous flap on inner side of front tibial spur tapered, rounded off, or sometimes ending in a right angle. 4

   Tarsal claws not pectinate. Upper end of prepectal carina usually reaching front edge of mesopleurum. Costula absent except sometimes in *Synomelix*. Glymma present or absent. First flagellar segment 1.4 to 2.2 as long as second. Cercus usually 0.2 to 2.0 as long as wide. Apex of membranous flap on inner side of front tibial spur ending in a right or acute angle except in *Asthenara*. 5

4. Occipital carina not interrupted above, its lower end often joining oral carina above base of mandible. Areolet present. Notaulus absent or present. Propodeum usually with carinae. Epipleura of tergites I and II nearly always folded under. . . . . 3. **Perilissini**

Occipital carina broadly interrupted above, its lower end reaching base of mandible without first joining oral carina. Areolet absent. Notaulus absent. Propodeum without carinae. Epipleurum of tergite I, and often also of tergite II usually projecting laterally. . . . . 4. **Scolobatini**

5. Ovipositor very slender, without a subapical dorsal notch. Apex of membranous flap on inner side of front tibia tapered. Thyridium absent. . . . . 2. **Pionini** (genus *Asthenara*)
   Ovipositor not unusually slender, with a subapical dorsal notch except in *Anoncus*. Apex of membranous flap on inner side of front tibia ending in a right or acute angle. Thyridium usually present. 6
6. Glymma present. . . . . 5. **Mesoleiini** (except genus *Apholium*)
   Glymma absent. 7
7. Hind spur of middle tibia 1.3 to 1.5 as long as front spur and more than half as long as its basitarsus. Clypeal margin sharp. . . . . 5. **Mesoleiini** (genus *Apholium*)
   Not entirely as above, the hind spur of middle tibia less than 1.3 as long as front spur and/or less than half as long as its basitarsus and/or clypeal margin blunt. . . . . 6. **Euryproctini**

1. Tribe **OLETHRODOTINI**

Clrionota is the only genus known from Taiwan.

2. Tribe **PIONINI**

Key to the genera of Pionini

1. Glymma present. Tarsal claws pectinate. Clypeus not separated from face by a groove, or only by a weak groove. . . . . 1. ***Rhorus***
   Glymma absent. Tarsal claws simple. Clypeus separated from face by a groove. 2
2. Outer face of mandible without a basal transverse impression. Subbasal part of lower edge of mandible sharp. . . . . 2. ***Syntactus***
   Outer face of mandible with a basal transverse impression. Subbasal part of lower edge of mandible rounded. . . . . 3. ***Sympherta***

3. Tribe **PERILISSINI**

Key to the genera of Perilissini

1. Genal carina meeting base of mandible, not joined with oral carina above base of mandible. 2
   Genal carina meeting oral carina shortly or some distance above base of mandible. 4
2. Basal vein decurved. Median vein with either a short erect spurious vein or a strong thickening a short distance basad of basal vein. . . . . 7. ***Neurogenia***
   Basal vein upcurved (as normal). Median vein without an erect spurious vein or a thickening. 3
3. Apical margin of male subgenital plate with one to several median notches. Apex of penis valve curved over and ending in an adze-like blade. Tergite I around 2.0 as long as wide. . . . . 5. ***Priopoda***
   Apical margin of male subgenital plate not notched. Apex of penis valve not or weakly curved,

not ending in an adze-like blade. Tergite I around 1.65 as long as wide. . . . 6. ***Lathrolestes***

4. Nervellus intercepted below middle, inclivous or sometimes vertical. Mediella moderately to rather strongly arched. . . . . 1. ***Trematopygodes***

Nervellus intercepted near or above middle, reclivous or sometimes vertical. Mediella weakly arched or nearly straight. 5

5. Mesopleurum with a median longitudinal furrow that extends its entire length. Front wing 14 to 22 mm. long. Upper tooth of mandible wider than lower tooth and at least as long as lower tooth. . . . . 4. ***Opheltes***

Mesopleurum with a median longitudinal furrow on only its hind 0.3 ±. Front wing 4 to 11 mm. long. Upper tooth of mandible not wider than lower tooth, frequently shorter than lower tooth. 6

6. Brachial vein not bent downward near its middle. Color various, sometimes fulvous. . . . . 2. ***Perilissus***

Brachial vein bent downward near its middle. Color pale fulvous. . . . . 3. ***Absyrtus***

4. Tribe **SCOLOBATINI**

Scolobates is the only genus known from Taiwan.

5. Tribe **MESOLEIINI**

Key to the genera of Mesoleiini

1. Glymma absent. Tergite I long and straight, without median dorsal carinae. . . . 4. ***Apholium***

Glymma present. Tergite I various. 2

2. Areolet absent. 3

Areolet present. 5

3. Ovipositor slender, without a subapical dorsal notch. Ovipositor sheath rather narrow, its hairs long and restricted to the apical 0.4. Combined areola and median basal area of propodeum long and narrow, bounded laterally by rather sharp carinae. Spurs of middle tibia of approximately equal length. Clypeus moderately wide, a little bulged medially near the apex, its profile strongly convex. Nervellus intercepted near its lower 0.33. Notaulus moderately sharp but not reaching front edge of mesoscutum. . . . . 8. ***Anoncus***

Ovipositor moderately stout, with a subapical dorsal notch. Ovipositor sheath wider, its hairs usually shorter and not restricted to the apical 0.4. Otherwise not entirely as above. 4

4. Nervellus usually inclivous. Apical margin of clypeus usually blunt at the midline or much swollen near the middle of the apical margin. Notaulus usually reaching front edge of mesoscutum. Longest spur of middle and hind tibiae usually somewhat shorter and straighter than in *Mesoleius*. . . . . 6. ***Campodorus***

Nervellus subvertical. Apical margin of clypeus sharp at the midline. Notaulus absent or not reaching to front edge of mesoscutum. Longest spur of middle and hind tibiae rather elongate and weakly curved. . . . . 7. ***Mesoleius***

5. Thyridium absent. Punctures on tergite II coarse. . . . . 3. ***Leipula***

Thyridium present. Punctures on tergite II very fine to coarse. 6

6. Notaulus usually rather long and sharp, usually reaching front edge of mesoscutum. Tergite I long and narrow. Mandibular teeth equal or almost so. Nervulus opposite basal vein or

distad of it by not more than 0.2 its length. . . . . 5. ***Alexeter***

Notaulus short, weak, or absent. Tergite I wider and shorter. Mandible with lower tooth usually longer than upper tooth. Nervulus distad of basal vein by 0.15 to 0.6 its length. 7

7. Median longitudinal carinae of tergite I moderately strong as far back as the spiracle. . . . . 1. ***Otlophorus***

Median longitudinal carinae of tergite I weak or lacking, not reaching to spiracle or very weak at the spiracle. . . . . 2. ***Alcochera***

6. Tribe **EURYPROCTINI**

Key to the genera of Euryproctini

1. Ovipositor sheath pointed backward or obliquely downward. Hairs on female subgenital plate almost erect. Apex of male clasper an elongate lobe. . . . . 7. ***Euryproctus***

Ovipositor sheath erect or slanted upward. Hairs on female subgenital plate pointed obliquely backward. Apex of male clasper not elongate. 2

2. Lower margin of clypeus sharp. 3

Lower margin of clypeus blunt. 6

3. Propodeum without an enclosed median apical area. First abdominal segment very long and narrow. . . . . 4. ***Mesoleptidea***

Propodeum with an enclosed median apical area. First abdominal segment moderately long. 4

4. Areolet absent. . . . . 2. ***Synodites***

Areolet present. 5

5. Apical margin of clypeus without a median reflexed projection. . . . . 1. ***Synomelix***

Apical margin of clypeus with a small median, weakly reflexed projection. . . 3. ***Pantorhaestes***

6. Areolet present. . . . . 5. ***Hadrodactylus***

Areolet absent. . . . . 6. ***Phobetes***

Subfamily **PORIZONTINAE**

Key to the tribes of Porizontinae

1. Mesopleurum medially with a long oblique groove. Labial palpus with 3 segments. Maxillary palpus with 4 or sometimes 5 segments. . . . . 1. **Nonnini**

Mesopleurum without a long oblique groove. Labial palpus with 4 segments. Maxillary palpus with 5 segments. 2

2. Cross section of first abdominal segment near its basal 0.3 circular or depressed-oval. Suture separating sternite I from its tergite tending to be at the middle of side or near top, at 0.3 the distance from base of the tergite lying at, or above the midheight of the segment, the suture always present. Tergite I never with a lateral pit in front of the spiracle. . . . . 2. **Porizontini**

Cross section of first abdominal segment near its basal 0.3 somewhat quadrate, trapezoidal, or triangular. Suture separating abdominal sternite I from its tergite tending to be below midheight, at the basal 0.3 of the segment lying below midheight of the segment (the suture

often absent or almost absent). Tergite I with or without a lateral pit in front of its spiracle. ..... 3. **Macrini**

1. Tribe **NONNINI**

Chriodes is the only genus known from Taiwan.

2. Tribe **PORIZONTINI**

Key to the genera of Porizontini

1. Eye weakly or not at all notched opposite antennal socket. Ovipositor more than twice as long as apical depth of abdomen. Temple wider, the head usually not lenticular. Second lateral area of propodeum usually defined by carinae. 2
   Eye rather strongly notched opposite antennal socket. Ovipositor less than twice as long as apical depth of abdomen. Temple very narrow, the head lenticular. Second lateral area of propodeum usually not defined by a carina all around. 5
2. Second recurrent vein vertical and short. Areolet absent. Ovipositor straight. .... 7. ***Sliochia***
   Second recurrent vein slanted outward. Areolet usually present. Ovipositor weakly upcurved. 3
3. Combined areola and petiolar area of propodeum forming a broad, moderately deep, concave furrow Discoidella in the form of a faint furrow, which often is not reaching basad to connect with nervellus. Basal part of first abdominal segment often somewhat prismatic. ..... 1. ***Sinophorus***
   Combined areola and petiolar area of propodeum not forming a concave furrow. Discoidella in the form of a faint furrow, which is nearly always connected with nervellus. Basal part of first abdominal segment cylindric. 4
4. Apex of male clasper rounded above or with a very shallow notched. Apex of propodeum usually not reaching middle of hind coxa. Cylindric basal section of first abdominal segment shorter and more curved, usually less than 3.0 as long as deep. Usually stouter species. ..... 2. ***Campoplex***
   Apex of male clasper with a semicircular notch above. Apex of propodeum usually reaching beyond middle of hind coxa. Cylindric basal section of first abdominal segment longer and straighter, usually more than 3.0 as long as deep. Usually more slender species. ..... 3. ***Venturia***
5. Central 0.3 or more of mesopleural suture impressed as a distinct groove. Extreme basal part of first abdominal segment with sternite not quite occupying its entire depth, so that in side view the lateral suture is a little below upper edge of petiole. Areolet present. Lower outer angle of second discoidal cell usually acute. ..... 4. ***Casinaria***
   Central 0.3 or more of mesopleural suture not impressed, indicated only by the raised mesepimeron and by transverse wrinkles. Extreme basal part of first abdominal segment with sternite occupting its entire depth, so that in side view its lateral suture runs along the upper margin of petiole. Areolet absent or present, but small. 6
6. Lower outer angle of second discoidal cell acute. Areolet usually present but small. ..... 5. ***Scenocharops***
   Lower outer angle of second discoidal cell a right angle. Areolet absent. .....6. ***Charops***

3. Tribe **MACRINI**

Key to the genera of Macrini

1. Propodeal spiracle nearly always elongate. Inner margin of eye nearly always strongly indented opposite antennal socket. Areolet nearly always large and receiving second recurrent vein near the middle. Ovipositor seldom longer than apical depth of abdomen. Abdomen strongly compressed. . . . . 5. ***Dusona***

   Propodeal spiracle circular or elliptic. Inner margin of eye seldom strongly indented opposite antennal socket. Areolet often small or absent. Ovipositor short to long. Abdomen weakly to strongly compressed. 2

2. Nervellus intercepted and connected with the base of discoidella, or glymma absent with the areolet present, and/or with hind basitarsus lacking a median ventral continuous row of very closely spaced hairs. (*Phobocampe* is keyed through both halves of the couplet). 3

   Nervellus not intercepted and not connected with the base of discoidella. Glymma present at least as a vestige unless either the areolet is absent or (and) the hind basitarsus has a median ventral continuous row of very closely spaced hairs. 11

3. Glymma absent. 4

   Glymma present. 5

4. Eyes bare or with such sparse and short hairs that they are difficult to see. Inner margins of eyes usually not convergent ventrad. . . . . 1. ***Callidora***

   Eyes with sparse to dense hairs. Inner margins of eyes convergent ventrad. . . . . 7. ***Cymodusa***

5. Areolet absent. Body elongate. . . . . 2. ***Leptocampoplex***

   Areolet present. Body short to elongate. 6

6. Apical margin of clypeus with a median tooth, which may be acute or obtuse, or sometimes so broad and weak as to be difficult to see. Areolet receiving second recurrent vein a little basad of middle. . . . . 4. ***Campoletis***

   Apical margin of clypeus without a trace of a median tooth. Areolet receiving second recurrent vein at or distad of middle. 7

7. Nervulus distad of basal vein by about 0.3 its length, strongly sloping, forming an angle of about 70° with the discoidal vein. Small, stocky species with the apical margin of clypeus truncate or subtruncate. 8

   Nervulus opposite basal vein, or distad of it by less than 0.3 its length, or otherwise not as above. 9

8. Thyridium adjacent to base of tergite II. Glymma large. Ovipositor about 2.2 as long as apical depth of abdomen. . . . . 8. ***Dolophron***

   Thyridium separated from base of tergite II by about its diameter. Glymma small or obsolescent. Ovipositor about as long as apical depth of abdomen. . . . . 9. ***Phobocampe*** (in part)

9. Posterior mesosternal carina nearly always interrupted in front of each middle coxa. Propodeal carinae weak. . . . . 6. ***Meloboris***

   Posterior mesosternal carina complete. Propodeal carinae often strong. 10

10. Propodeum very short. Inner eye margins moderately convergent ventrad. Discoidella unpigmented. . . . . 3. ***Spudastica***

    Propodeum moderately long. Inner eye margins subparallel or somewhat divergent ventrad. Discoidella often pigmented. . . . . 10. ***Tranosema*** (in part)

11. Hind basitarsus with a continuous, straight, median ventral row of very closely spaced small hairs (such a row usually present also on segments II to IV of hind tarsus and segments I to II of middle tarsus). 12
Hind basitarsus without such a continuous straight median ventral row of hairs. 15
12. Apical margin of clypeus blunt, not reflexed, and rather evenly curved. Clypeus apically not impressed. Areolet absent. Glymma usually present. Ovipositor usually much longer than apical depth of abdomen. . . . . 17. ***Eriborus***
Apical margin of clypeus thin and reflexed, often truncate medially. Clypeus apically more of less impressed. Areolet present or absent. Glymma often absent. Ovipositor not or only a little longer than apical depth of abdomen. 13
13. Areolet absent. Mesopleurum usually polished or subpolished, often striate above, with medium sized to rather large punctures. . . . . 20. ***Melalophacharops***
Areolet present. Mesopleurum not as above. 14
14. Nervellus vertical or subvertical. Ovipositor 1.0 to 2.2 as long as apical depth of abdomen. . . . . 18. ***Xanthocampoplex***
Nervellus strongly reclivous. Ovipositor about 1.0 as long as apical depth of abdomen. . . . . 19. ***Echthronomas***
15. Areolet absent (*Diadegma* keys through both halves of the couplet). 16
Areolet present. 18
16. Genal carina joining mandibular base. . . . . 14. ***Genotropis***
Genal carina joining oral carina. 17
17. Areola broad and short, usually wider than long (juncture of areola and petiolar area indicated by a weak constriction). Nervellus slightly inclivous to vertical. Intercubitus about the same length as the section of cubitus between intercubitus and second recurrent vein. . 11. ***Enytus***
Areola narrower and longer, longer than wide (juncture of areola and petiolar area indicated by a weak constriction). Nervellus slightly reclivous to vertical. Intercubitus longer than the section of cubitus between intercubitus and second recurrent vein. . . . . 12. ***Diadegma*** (a few species)
18. Nervulus distad of basal vein by abot 0.3 its length, strongly sloping to make an angle of about 70° with the discoidal vein. Small, stocky species with the apical margin of clypeus truncate and ovipositor not longer than apical depth of abdomen. . . . . 9. ***Phobocampe*** (most specimens)
Nervulus opposite basal vein or distad of basal vein by less than 0.3 its length, not strongly sloping. 19
19. Basal 0.65 ± of lower margin of mandible bearing a moderately wide flange. Temple rather narrow. Propodeal carinae usually weak. Apical margin of clypeus convex. Ovipositor not, or only a little longer than apical depth of abdomen. . . . . 13. ***Hyposoter***
Basal 0.65 ± of lower margin of mandible bearing a narrow flange or only a high carina. Temple moderately narrow to wide. Propodeal carinae usually strong. 20
20. Clypeus unusually wide, its apex truncate or weakly convex. Temple long and swollen. Lower tooth of mandible often longer than upper tooth. Ovipositor not longer than apical depth of abdomen. . . . . 15. ***Olesicampe***
Clypeus not unusually wide, its apical margin usually convex. Temple moderately short to long and swollen. Lower tooth of mandible not longer than upper tooth. Ovipositor longer than apical depth of abdomen. 21

21. Glymma absent. Areola triangular and very small, broadly confluent with petiolar area. Ovipositor a little longer than apical depth of abdomen. . . . . 16. ***Lemophagus***
Glymma present. 22
22. Hind tibia with a basal fuscous band that reaches to base of tibia. Posterior mesosternal carina usually absent medially. Nervellus vertical to slightly inclivous. Areola very short and wide, confluent with the very wide petiolar area. . . . . 10. ***Tranosema*** (most specimens)
Hind tibia uniformly colored or with a subbasal fuscous band that does not reach the base of tibia. Posterior mesosternal carina present medially. Nervellus vertical to weakly reclivous. Areola usually rather long, confluent with the moderately narrow to wide petiolar area, or in a few species with obsolescent propodeal carinae. . . . . 12. ***Diadegma*** (most species)

Subfamily **CREMASTINAE**

Key to the genera of Cremastinae

1. Hind femur with a tooth beneath, a little beyond the middle (tooth in females often very small but always present in the Taiwanese species). Tergite II with thyridium near base. Ovipositor tip sinuate. . . . . 1. ***Pristomerus***
Hind femur without a tooth beneath. Tergite II without a thyridium. Ovipositor tip straight or weakly curved, or rarely sinuate. 2
2. Lower margins of tergite I parallel and separate, sternite I visible for its entire length. . . . . 2. ***Trathala***
Lower margins of tergite I curved together toward middle to touch or nearly touch, and thus to hide the sternite I near middle of petiole, or sometimes the lower margins of tergite I not visible because they are completely fused with the sternite. . . . . 3. ***Temelucha***

Subfamily **PHRUDINAE**

Key to the genera of Phrudinae

1. Malar space with a vertical groove between eye and mandible. Areolet present and stalked above. Tergite I with a glymma. Ovipositor longer, 2.2 to 4.0 as long as the depth of abdomen. . . . . 1. ***Brachyscleroma***
Malar space without a vertical groove between eye and mandible. Areolet absent or present, when present sessile in shape. Tergite I without a glymma. Ovipositor shorter, subequal or less than the depth of abdomen. 2
2. Areolet present. Sternaulus absent. Hind coxa entirely punctate, not mat. Tergite I paralleled on both side without clearly longitudinal striae. . . . . 2. ***Phrudus***
Areolet absent. Sternaulus deep but short. Hind coxa entirely distinctly mat. Tergite I with numerous, distinct, longitudinal striae. . . . . 3. ***Astrenis***

Subfamily **TERSILOCHINAE**

Key to the genera of Tersilochinae

1. Propodeum with a pair of median longitudinal carinae between petiolar area and base of

propodeum, or with a median longitudinal groove, or with a group of median longitudinal wrinkles. . . . : 2

Propodeum with a single median longitudinal carina between petiolar area and base of propodeum. 6

2. Glymma present, but usually very small. Propodeal spiracle adjacent to pleural carina or if distant from pleural carina then separated by usually less than 1.5 its diameter. 3

Glymma entirely absent. Propodeal spiracle separated from pleural carina by 1.5 to 4.0 its diameter. 5

3. Mesopleurum with a foveate groove that is long and reaching middle coxa, almost horizontal, and only weakly curved, the direction of its front end not more than 30° from the direction of its hind end. Thorax elongate and compressed. Hind tibia of female usually stout, and hind tarsus elongate. Ovipositor short, and strongly upcurved. . . . . 2. ***Barycnemis***

Mesopleurum with or without a foveate groove, the groove when present either short or strongly curved. Hind tibia of female and ovipositor not as above. 4

4. Thyridium long, at least as long as wide. . . . . 1. ***Probles***

Thyridium short, not longer than wide. . . . . 3. ***Tersilochus***

5. Inner margins of eyes of male strongly convergent dorsad. Nervellus strongly reclivous. . . . . 4. ***Allophrys***

Inner margins of eyes of male parallel. Nervellus vertical to moderately reclivous. . . . . 5. ***Phradis***

6. First brachial cell closed at apex, lower part of discoideus present except for a narrow bulla. . . . . 6. ***Diaparsis***

First brachial cell open at apex, lower part of discoideus absent. 7

7. Second recurrent vein complete. Ovipositor tip not sinuate. . . . . 7. ***Aneuclis***

Second recurrent vein partly or completely absent. Ovipositor tip sinuate. . . . . 8. ***Sathropterus***

Subfamily **OPHIONINAE**

Key to the genera of Ophioninae

1. Posterior mesosternal carina incomplete, its median part absent. Ramulus usually present. 2

Posterior mesosternal carina complete. Ramulus nearly always absent. 3

2. Notaulus moderately long. Base of radial vein not thickened. Discocubital cell of front wing without a sclerome. . . . . 1. ***Ophion***

Notaulus not distinct. Base of radial vein thickened. Discocubital cell of front wing with a small sclerome. . . . . 2. ***Sclerophion***

3. Pecten of hind tarsal claws extending beyond the true apex of claw so that there is a small black tooth distad of the large apical brown tooth. Penultimate hamulus enlarged and of a different shape than the rest of the hamuli. Apex of mandible broad, not twisted. . . . . 5. ***Leptophion***

Pecten of hind tarsal claws normal, not extending beyond true apex of claw. Penultimate hamulus normal, similar to the rest of the hamuli. Apex of mandible twisted or not twisted. 4

4. Mandible not strongly narrowed nor apically twisted, near middle about 0.65 as wide as it is at base. Base of radius usually separated from base of stigma by about 2.0 the width of stigma. . . . . 3. ***Dicamptus***
   Mandible strongly narrowed and apically twisted, near middle about 0.3 as wide as it is at base. Base of radius usually separated from base of stigma by about 1.5 the width of stigma. . . . . 4. ***Enicospilus***

Subfamily **MESOCHORINAE**

Key to the genera of Mesochorinae

1. Discoidella nearly always present, at least as a faint trace, nervellus nearly always intercepted. Upper margin of face without a transverse or oblique carina next to antennal socket. Malar space without a distinct groove between lateral corner of clypeus and eye. 2
   Discoidella completely absent, nervellus not intercepted. Upper margin of face with a transverse or oblique carina next to antennal socket. Malar space with a groove between lateral corner of clypeus and eye. 3
2. Tergite I without a dorsolateral longitudinal carina or wrinkle, the tergite 3.6 to 6.7 as long as wide. . . . . 1. ***Cidaphus***
   Tergite I with a partial or complete dorsolateral longitudinal carina or wrinkle, the tergite 1.3 to 3.6 as long as wide. . . . . 2. ***Astiphromma***
3. Upper end of prepectal carina separated from swollen marginal rim of mesopleurum by a distance approximately equal to the diameter of the flagellum. Transverse carina at upper edge of face nearly always dipped downward at center. Nervulus opposite basal vein or somewhat distad. . . . . 3. ***Mesochorus***
   Upper end of prepectal carina reaching the swollen marginal rim of mesopleurum. Transverse carina at upper edge of face straight across the center. Nervulus distad of basal vein by about its length. 4
4. Ovipositor sheath 3.3 to 7.0 as long as wide. Apex of propodeum of both sexes not reaching beyond midlength of hind coxa. . . . . 4. ***Stictopisthus***
   Ovipositor sheath 2.5 to 3.0 as long as wide. Apex of propodeum of female reaching beyond apical 0.3 of hind coxa. . . . . 5. ***Plectochorus***

Subfamily **METOPIINAE**

Key to the genera of Metopiinae

1. Face occupied largely by a flat or concave escutcheon-shaped area bounded by a carina. Middle tibia with 1 spur. . . . . 4. ***Metopius***
   Face entirely convex. Middle tibia with 2 spurs except in male *Aceraspis*. 2
2. Epipleura of tergites III to V apparently absent (represented by narrow and inconspicuous vestiges). Front and middle tarsal claws conspicuously pectinate. 3
   Epipleura of tergites III to V well developed. Front and middle tarsal claws usually apparently simple. 5
3. Areolet absent. Abdomen clavate, the fifth and sixth segments much wider than the preceding

segments, the apex of the sixth segment subspherically rounded. Middle tibia of male with 1 spur. ..... 1. ***Aceratapis***

Areolet present. Abdomen parallel-sided, the fifth and sixth segments not wider than the preceding segments, and the apex of the sixth segment not specialized. Middle tibia of male with 2 spurs. 4

4. Upper edge of pronotum paralleled by a broad, shallow, submarginal groove. Sublateral longitudinal carina of abdomen extending at most to basal 0.33 of tergite II, entirely absent from tergite III. Mesopleural suture present. ..... 2. ***Chorinaeus***

Upper edge of pronotum without a distinct submarginal groove. Sublateral longitudinal carina of abdomen extending the entire length of tergite II. Mesopleural suture absent. ..... 3. ***Trieces***

5. Antennal sockets separated by a high lamella, the lamella with a deep median groove dorsally just below median ocellus. 6

Antennal sockets not separated by a high lamella, or if so it does not have a median groove. 7

6. First abdominal segment broad basally, with spiracle near basal 0.25, its sternite extending about 0.2 its length. Propodeum with distinct dorsal and posterodorsal faces. Head somewhat cubical. Edge of interantennal lamella curved in profile. ..... 5. ***Triclistus***

First abdominal segment narrow basally, with spiracle near basal 0.37 to 0.5, its sternite extending 0.3 to 0.5 its length. Propodeum without distinct dorsal and posterodorsal faces, these blending in an even curve. Head lenticular. Edge of interantennal lamella angulated in profile. ..... 6. ***Colpotrochia***

7. Areolet present. Occipital carina absent. ..... 9. ***Carria***

Areolet absent. Occipital carina present, at least on upper side. 8

8. Tergite II with a pair of median longitudinal carinae, at least at its base. Second recurrent vein meeting cubitus almost opposite the intercubitus, second abscissa of cubitus being less than 0.25 the length of intercubitus. Metapleurum densely hairy all over. Temple short. 9

Tergite II without median longitudinal carinae. Second recurrent vein meeting cubitus much beyond intercubitus, second abscissa of cubitus being more than 0.3 as long as intercubitus. Metapleurum usually bare or with only a few hairs. Temple rather long. 10

9. Tergite I in profile evenly convex. Epipleura of fifth and sixth abdominal segments weakly or indistinctly separated from their tergites. Subtegular ridge rounded. ..... 7. ***Bothromus***

Tergite I in profile pyramidal. Epipleura of fifth and sixth abdominal segments sharply separated and sharply folded under. Subtegular ridge sharp. ..... 8. ***Drepanoctonus***

10. Back of head vertical behind posterior ocelli. Face in profile sloping forward to its upper margin. Two spurs of middle tibia approximately equal in length. ..... 10. ***Hypsicera***

Back of head sloping from posterior ocelli to the level of the occipital carina, thence approximately vertical to the foramen magnum. Two spurs of middle tibia very unequal in length. ..... 11. ***Exochus***

Subfamily **ANOMALONINAE**

Key to the tribes of Anomaloninae

1. Epipleurum of tergite III separated by a longitudinal crease just beneath the spiracle. Inter-

cubitus joining cubitus beyond second recurrent vein by a distance greater than 0.6 its length. Middle tibia with 1 spur. Dorsal part of occipital carina present or absent, when present well below the hind ocelli. Ovipositor sheath about 3.0 as long as apical depth of abdomen. . . . . 1. **Anomalonini**

Epipleurum of tergite III not separated by a crease. Intercubitus joining cubitus basad of second recurrent vein, opposite it, or sometimes distad. Middle tibia with 2 spurs. Dorsal part of occipital carina present and close to level of hind ocelli. Ovipositor sheath about 0.9 to 3.8 (in *Trichomma*) as long as apical depth of abdomen. 2

2. Lower front corner of pronotum rounded or with an obtuse angle. Postnervulus joining discocubital cell between its midlength and basal 0.35. Apex of clypeus pointed at center. . . . . 2. **Gravenhorstiini**

Lower front corner of pronotum with a small acute tooth. Postnervulus joining discocubital cell usually at its midlength. Apex of clypeus truncate, rounded, or with a median notch. . . . . 3. **Theriini**

1. Tribe ANOMALONINI

Anomalon is the only genus known from Taiwan.

2. Tribe GRAVENHORSTIINI

Key to the genera of Gravenhorstiini

1. Eyes with conspicuous long hairs, their inner margins strongly convergent ventrad. Ovipositor sheath 2.0 to 3.8 as long as apical depth of abdomen. . . . . 1. ***Trichomma***

Eyes bare or with short, inconspicuous hairs, their inner margins convergent ventrad or not. Ovipositor sheath about 0.9 as long as apical depth of abdomen. 2

2. Postnervulus intercepted near or below the middle. Discoidella always present. 3

Postnervulus intercepted distinctly above the middle, or in *Parania* sometimes the subdiscoideus arising together with first recurrent vein. Discoidella present or absent. 4

3. Notaulus long and distinct. Mesoscutum in profile with an evenly convex curve to the front end or with a slight flattening but not a distinct concavity just before the front end. Frons without a median compressed tooth. Tarsal claws usually not pectinate to the apex. . . . . 2. ***Habronyx***

Notaulus absent or indistinct. Mesoscutum in profile with a distinct concavity just before its front end, so that its front end is like a small shelf. Frons usually with a median compressed tooth. Tarsal claws pectinate to the apex. . . . . 3. ***Aphanistes***

4. Front coxa, as seen from below, with a carina along its front edge. 5

Front coxa, as seen from below, without a carina along its front edge. 6

5. Carina on front coxa present on front side and often also on inner side, but not on outer side above socket of trochanter. Apex of clypeus with a single median point. . . . . 5. ***Trichionotus***

Carina on front coxa almost encircling the coxa, present on the outer side as well as on front and inner sides of the coxa. Apex of clypeus with a small median tooth and a small tooth on each side, the side teeth sometimes indistinct. . . . . 6. ***Perisphincter***

6. Discoidella present, at least as a trace. Base of second discoidal cell truncate. . . . 4. ***Barylypa***

Discoidella entirely absent. Base of second discoidal cell pointed. . . . . 7. ***Parania***

3. Tribe THERIINI

Key to the genera of Theriini

1. Apex of propodeum raised away from hind coxae so that attachment of abdomen is distant from hind coxae. Postpectal carina absent. Genal carina joining oral carina. Intercubitus far basad of second recurrent vein, sometimes absent because radial and cubital veins are touching. . . . . 3. ***Brachynervus***

   Apex of propodeum not raised away from hind coxae. Postpectal carina present. Genal carina joining base of mandible. Intercubitus basad of second recurrent vein by less than 1.5 its length. 2

2. Postpectal carina interrupted in front of each middle coxa. Frons without a high lamella or compressed horn between antennal sockets but often with a median lamella or compressed horn above antennal sockets. Hind tarsal claws with a median or postmedian curve of less than 90°. Second to fourth segments of hind tarsus of male with a weak median longitudinal ridge. . . . . 1. ***Therion***

   Postpectal carina complete. Frons with a high lamella between antennal sockets. Hind tarsal claws with a median sharp bend of about 100°. Second segment of hind tarsus of male usually with a large sunken area beneath. . . . . 2. ***Heteropelma***

Subfamily ACAENITINAE

Key to the tribes of Acaenitinae

1. Front and middle tarsal claws without a tooth. Frons without a median vertical carina, but sometimes with a weak vertical ridge. Areolet present. Teeth on ovipositor tip moderately strong. . . . . 1. **Coleocentrini**

   Front and middle tarsal claws with an acute accessory tooth near apex. Frons with a median vertical carina. Areolet absent. Teeth on ovipositor tip weak or sometimes lacking. . . . . 2. **Acaenitini**

1. Tribe COLEOCENTRINI

Coleocentrus is the only genus known from Taiwan.

2. Tribe ACAENITINI

Key to the genera of Acaenitini

1. Ventral swelling of sternite I without hairs, or rarely with one or a few hairs. . . . 6. ***Yezoceryx***

   Ventral swelling of sternite I with numerous long erect hairs. 2

2. Clypeus without a subapical transverse ridge, its apical half rather flat and apical margin thin. 3

   Clypeus with a strong transverse subapical ridge that gives its apex a truncate appearance. . . 4

3. Intercubitus opposite second recurrent vein or a little mesad of it. Hind tarsal claws with an

acute accessory tooth at midlength on mesal side. . . . . 1. ***Yamatarotes***

Intercubitus distad of second recurrent vein by about its length. Hind tarsal claws without an accessory tooth. . . . . 2. ***Ischigakia***

4. Median lobe of mesoscutum projecting strongly forward. Upper tooth of mandible much smaller than lower tooth. Under side of hind femur often with a blunt tooth beyond the middle. . . . . 3. ***Jezarotes***

Median lobe of mesoscutum vertical in front or rounded off, not projecting forward. Upper and lower teeth of mandible about the same size. Under side of hind femur without a tooth. 5

5. Propodeum with distinct, regular carinae. Exposed portion of labrum about 0.4 to 0.8 as long as wide. Intercubitus opposite or a little distad of second recurrent vein. Bullae on second recurrent vein a little distant from each other. . . . . 4. ***Spilopteron***

Propodeum without distinct carinae but replaced by strong, irregular wrinkling. Exposed portion of labrum about 0.35 as long as wide. Intercubitus mesad of second recurrent vein by about 1.5 the vein's width. Bullae on second recurrent vein close to each other. . . . . 5. ***Metachorischizus***

Subfamily **MICROLEPTINAE**

Key to the genera of Microleptinae

1. Hind margin of apical truncation of scape membranous and in dried specimens somewhat folded inward, the scape inflated and with a very oblique apical truncation. Areolet absent. Ovipositor shorter than apical depth of abdomen. Tergite I long and approximately straight, its spiracle at or in front of middle. . . . . 19. ***Megastylus***

Hind margin of apical truncation of scape not membranous. Otherwise not entirely as above. 2

2. Second recurrent vein with 1 bulla. 3

Second recurrent vein with 2 bullae. 5

3. Head strongly protuberant just below antennal sockets. Apical fringe on hind side of hind tibia dense, its upper end slanted toward base of tibia. Nervulus distad of basal vein by about 0.65 its length. . . . . 1. ***Microleptes***

Head not strongly protuberant below antennal sockets. Apical fringe on hind side of hind tibia not unusually dense, its upper end not slanted toward base of tibia. Nervulus approximately opposite basal vein. 4

4. First abdominal segment rather stout, about 1.2 to 2.0 as long as wide. Areolet absent. Apical 0.3 of female abdomen not compressed. Ovipositor sheath not wide and flattened. . . . . 2. ***Hemiphanes***

First abdominal segment slender, its sternite ending behind the middle. Areolet present. Apical 0.3 of female abdomen compressed. Ovipositor sheath wide and flattened. . . . . 3. ***Oxytorus***

5. Apex of sternite I at the midline not reaching midlength of its tergite, the sternite not fused with its tergite. Glymma present but shallow except in *Hyperacmus*. 6

Apex of sternite I at the midline reaching to or beyond midlength of its tergite, the sternite usually fused with its tergite. Glymma absent. 12

6. Epipleura of tergites II and III not separated by a crease. 7
Epipleura of tergite II, and usually of tergite III, separated by a crease. 8
7. Areolet absent. Discoidella present and strong. Propodeum sculptured, with median and sublateral carinae complete. Ovipositor not surpassing end of abdomen. . . . 4. ***Hyperacmus***
Areolet present. Discoidella absent. Propodeum smooth, lacking median carinae, and the sublateral carinae absent or present only near hind end of propodeum. Ovipositor usually far surpassing end of abdomen. . . . . 13. ***Aperileptus***
8. Portion of cubitus between intercubitus and second recurrent vein less than 0.3 as long as second recurrent vein. 9
Portion of cubitus between intercubitus and second recurrent vein 0.5 to 0.7 as long as second recurrent vein. 11
9. Nervellus inclivous. Male flagellum with apex of third segment and base of fourth segment not notched on outer side. . . . . 5. ***Allomacrus***
Nervellus vertical or reclivous. Male flagellum with apex of third segment and base of fourth segment roundly notched on outer side. 10
10. Occipital carina broadly interrupted dorsally. Tip of mandible strongly twisted so that lower tooth is obliquely behind upper tooth. Front wing 3.0 to 4.7 mm. long. . . . . 6. ***Apoclima***
Occipital carina complete dorsally. Tip of mandible not twisted. Front wing 6.5 to 7.9 mm. long. . . . . 7. ***Cylloceria***
11. Notaulus present, with a short vertical carina on its front side. Discoidella present. Ovipositor sheath 1.4 to 2.6 as long as hind tibia. . . . . 8. ***Aniseres***
Notaulus present or absent, when present without a vertical carina on its front side. Discoidella present or absent. Ovipositor sheath about 0.15 as long as hind tibia. . . . . 9. ***Pantisarthrus***
12. Epipleura of tergites II and III not separated by a crease. 13
Epipleura of tergite II, and usually also of tergite III, separated by a crease. 14
13. Petiolar area of propodeum about 1.25 as long as combined areola and basal area in male, about 1.8 as long in female. Tergite I mat to subpolished, arched. Flagellar segments of female rather stout, the second flagellar segment about 4.0 as long as wide. Clypeus very narrow, its fovea large or very large. . . . . 11. ***Dialipsis***
Petiolar area of propodeum around 1.2 as long as combined areola and basal area. Tergite I strongly mat, flat above to somewhat arched. Flagellar segments of female slender, the second flagellar segment 4.2 to 6.0 as long as wide. Clypeus of moderate width to narrow, its fovea small to large. . . . . 12. ***Plectiscidea***
14. Tip of mandible, as seen from outer side, very narrow and with a single point, the tip twisted by 80° to 90° so that lower tooth is inside, or the lower tooth sometimes lacking. Ovipositor sheath 0.4 to 2.5 as long as apical depth of abdomen. 15
Tip of mandible, as seen from outer side, moderately narrow but with lower tooth visible, the tip not twisted or only moderately twisted. Ovipositor sheath at least 0.5 as long as apical depth of abdomen. 16
15. Scape not especially large. Ovipositor sheath 1.0 to 2.5 as long as apical depth of abdomen. . . . . 17. ***Eusterinx***
Scape very large. Ovipositor sheath about 0.4 as long as apical depth of abdomen. . . . . 18. ***Helictes***
16. Areolet absent, the intercubitus short or absent because of approximation or touching of radial and cubital veins. Tergites I and II polished and usually without wrinkles. . . . . 10. ***Proclitus***

Areolet present, or if absent the intercubitus moderately long. Tergites I and II often mat or striate. 17

17. Apex of sternite I near midlength of tergite I. Ovipositor strongly upcurved. Female subgenital plate not unusually large. . . . . 14. ***Laepserus***

Apex of sternite I near apical 0.3 of tergite I. Ovipositor approximately straight. Female subgenital plate large. 18

18. Hind femur about 4.5 as long as deep. Clypeus about 1.3 as wide as long. Hind tarsal claws moderately large. . . . . 15. ***Symplecis***

Hind femur about 3.5 as long as deep. Clypeus about 1.6 as wide as long. Hind tarsal claws exceptionally large. . . . . 16. ***Catastenus***

Subfamily **ORTHOPELMATINAE**

This subfamily contains only the genus ***Orthopelma.***

Subfamily **ORTHOCENTRINAE**

Key to the genera of Orthocentrinae

1. Lower edge of clypeus weakly convex, adjacent to mandibles, labrum not exposed below clypeus. Nervellus vertical to inclivous. Notaulus present or absent. Ovipositor sheath with uniformly distributed hairs, only a short basal part flexible and hairless. Areolet present or absent, when present often sessile above. . . . . 1. ***Orthocentrus***

Lower edge of clypeus truncate or subtruncate, at the midline a short distance from mandibles, labrum exposed below clypeus. Nervellus vertical to reclivous. Notaulus absent. Ovipositor sheath various, often with a long, hairless, flexible basal portion. Areolet usually absent, when present nearly always pointed above. 2

2. Prepectal carina present, at least the upper part of its lateral portion visible. 3

Prepectal carina entirely lacking. (in a few species of *Neurateles* the prepectal carina is replaced by some weak wrinkles, but there is not a definite carina). 4

3. Lower tooth of mandible present and visible below and a little mesad of upper tooth. Ovipositor sheath about 1.9 as long as hind tibia, its entire length with hairs. Nervellus vertical, usually with a faint interception a little below the middle. Areolet usually present. . . . . 2. ***Picrostigeus***

Lower tooth of mandible either absent or placed on mesal edge of upper tooth so that it is invisible when mandible is closed. Ovipositor sheath 0.25 to 1.35 as long as hind tibia, with a long basal section that is hairless. Nervellus vertical or reclivous, not intercepted. Areolet usually absent. . . . . 3. ***Stenomacrus***

4. Apex of clypeus not reflexed. Second section of cubital vein 0.9 to 1.5 as long as intercubitus. Abdomen moderately long so that apex of hind femur is at apical 0.2 to 0.4 of abdomen. Tergite II without a distinct postmedian transverse groove. . . . . 4. ***Leipaulus***

Apex of clypeus weakly reflexed. Second section of cubital vein 0.4 to 0.8 as long as intercubitus. Abdomen short so that apex of hind femur is approximately at apex of abdomen. Tergite II with a postmedian transverse groove (the groove weak or interrupted medially). . . . . 5. ***Plectiscus***

Subfamily **DIPLAZONTINAE**

Key to the genera of Diplazontinae

1. Face polished, finely and weakly punctate, usually with 2 vertical impressions between clypeus and antennal sockets. 2
   Face mat or shagreened and punctate, without a vertical impression between clypeus and antennal sockets. 3
2. Spiracle of tergite II below lateral crease, on the epipleurum. Notaulus absent. . . . . 8. ***Sussaba***
   Spiracle of tergite II above lateral crease, on the tergite. Notaulus present or absent. . . . . 7. **Promethes**
3. Notaulus distinct. Clypeus usually flat and more or less concave. 4
   Notaulus absent. Clypeus mostly convex, sometimes flat. 5
4. Tergites I to III with a postmedian transverse groove. Hind tibia black at base and white medially. . . . . 6. ***Diplazon***
   Tergites I to III without a postmedian transverse groove. Hind tibia entirely black. . . . . 5. ***Tymmophorus***
5. Abdominal tergite I and basal 0.25 of tergite II with strong submedian longitudinal carinae, lateral creases present on tergites I to IV. Propodeum with distinct punctures or carinae. . . . . 2. ***Enizemum***
   Abdominal tergites I and II without strong median carinae, lateral creases present on tergite II and basal part of III. Propodeum with or without distinct carinae. 6
6. Areolet absent. Clypeus with a weak median vertical groove. Male flagellum without tyloids. Propodeum without carinae. . . . . 3. ***Woldstedtius***
   Areolet present or absent, usually present. Clypeus without a median vertical groove. Male flagellum with tyloids. Propodeum with or without carinae. 7
7. Propodeum with distinct carinae. Tergite I with median dorsal carinae strong. . . . . 4. ***Syrphophilus***
   Propodeum without carinae or with only weak carinae. Tergite I without median dorsal carinae or with only weak median dorsal carinae. . . . . 1. ***Syrphoctonus***

Subfamily **ICHNEUMONINAE**

Key to the tribes of Ichneumoninae

1. Basal half of first abdominal segment wider than deep, flat above. Ovipositor short, subtended by a large, broadly triangular subgenital plate. Clypeus moderately small, moderately to strongly convex. . . . . 7. **Pristicerotini**
   Basal half of first abdominal segment about as wide as deep or deeper than wide. Often rounded or with carinae above. 2
2. Propodeal spiracle circular or subcircular. 3
   Propodeal spiracle elliptic to elongate. 4
3. Occipital and hypostomal carinae meeting above base of mandible. Mandible usually but not always with two apical teeth. Clypeus short, its apex usually convexly arcuate but sometimes otherwise. . . . . 1. **Alomyini**

Occipital and hypostomal carinae meeting at base of mandible. Mandible with a single apical tooth. Clypeus rather long, its apex truncate or emarginate. . . . . 2. **Heterischnini**

4. Mandible wide, not or very little tapered apically, both of its teeth rather long and sharp. Occipital carina not joining hypostomal carina before reaching base of mandible. Temple swollen. Face and clypeus often forming an evenly convex surface. 5

Not as above, either the mandible narrow or tapered apically or the occipital carina joining hypostomal carina above base of mandible. 9

5. Abdomen long and narrow, tergite II about 1.4 as long as wide. Areolet truncate above. Nervulus distad of basal vein or sometimes opposite it. 6

Abdomen usually shorter and wider, tergite II usually 0.6 to 1.1 as long as wide, but sometimes in *Notosemus* as much as 1.8 as long as wide. Areolet truncate or pointed above. Nervulus basad, opposite, or distad of basal vein. 7

6. Apicoventral corners of tergites II–IV produced, forming acute angles. Malar space about 0.9 as long as basal width of mandible. . . . . 10. **Ichneumonini** (genus *Atanyjoppa*)

Apicoventral corners of tergites II–IV rounded, forming obtuse angles. Malar space about 2.0 as long as basal width of mandible. . . . . 6. **Ischnojoppini**

7. Areolet pointed above. Nervulus distad of basal vein. Spiracle of tergite I about 3.0 as long as wide. Apex of front tibia with a tooth-like projection on the outer side. Thyridia very wide, separated on the midline by about half the width of each. Base of areola at base of propodeum. . . . . 9. **Goedartiini**

Areolet truncate above. Nervulus basad of or opposite basal vein except rarely in *Anisobas*. Spiracle of tergite I about 1.4 as long as wide. Apex of front tibia without a tooth-like projection on the outer side. Thyridia various. Base of areola a little separated from base of propodeum. 8

8. Thyridia very wide, their separation on the midline equal to about half the width of each. . . . . 3. **Notosemini**

Thyridia rather narrow to moderately wide, their separation on the midline equal to about the width of each. . . . . 5. **Listrodromini**

9. Propodeum in profile with an evenly arcuate dorsal line from base of areola to attachment of abdomen, the curve sometimes with a faint interruption at apex of second lateral area. Second lateral area long and reaching far down so that its apex is closer to abdominal attachment than to costula, sometimes the second lateral area fused with third lateral area and the combined area thus reaching apex of propodeum. Nervulus distad of basal vein. Gastrocoelus rather deep. Mandible of normal shape, its lower tooth of moderate size. Occipital carina joining hypostomal carina above base of mandible. 10

Not as above, either the propodeum with distinguishable dorsal and posterodorsal faces which meet at a more or less distinct angle or tooth at apex of second lateral area, or apex of second lateral area closer to costula than to attachment of abdomen, or nervulus basad of or opposite basal vein, or lower tooth of mandible small or absent, or occipital carina not as above. . . . . 4. **Joppini**

10. Areola completely open behind, its anterior rim usually much strengthened to make a heavy arcuate ridge or boss. Median longitudinal carinae rather well separated, parallel or subparallel, and strong, always stronger than the carinae separating second and third lateral areas, the latter carinae absent or very weak. Labrum exposed as a crescentic plate. Apical margin of clypeus truncate or concave, without a median lobe. . . . . 8. **Trogini**

Areola closed behind, often small, raised, and converted into a polished boss that is similar to the boss formed by anterior rim of areola in the Trogini but narrower. Median longitudinal carinae usually close together basally, usually weaker than the carinae separating second and third lateral areas, the latter carinae, however, sometimes weak or absent. Labrum hidden or more or less exposed, the exposed portion subtriangular to crescentic. Apical margin of clypeus various, usually with a weak median lobe or thickening. . . . . 10. **Ichneumonini**

1. Tribe **ALOMYINI**

Oronotus is the only genus known from Taiwan.

2. Tribe **HETERISCHNINI**

Lusius is the only genus known from Taiwan.

3. Tribe **NOTOSEMINI**

Key to the genera of Notosemini

1. Posterior mesosternal carina complete. Notaulus sharp on front 0.3 or more of mesoscutum. . . . . 1. ***Satrius***
   Posterior mesosternal carina widely interrupted in front of each middle coxa. Notaulus weak or absent. . . . . 2. ***Imeria***

4. Tribe **JOPPINI**

Key to the genera of Joppini

1. Thyridia very wide, the space between them less than 0.7 the width of each. 2
   Thyridia moderately wide, narrow, or sometimes absent, when present the space between them more than 0.7 the width of each. 8
2. Occipital carina joining hypostomal carina at or very close to base of mandible. Surface of apical half of clypeus a little concave, its apical margin thin medially. 3
   Occipital carina joining hypostomal carina a little distance above base of mandible. Surface of apical half of clypeus more or less convex (except in some species of *Stenichneumon*), its apical margin normally thick. 5
3. Lower tooth of mandible on inner edge of mandible, the apical half of mandible in external view very narrow. Apical margin of clypeus convex medially. Nervulus opposite basal vein. . . . . 1. ***Allonotus***
   Lower tooth of mandible on lower edge of mandible, the apical half of mandible rather wide. Apical margin of clypeus truncate or concave medially. 4
4. Scutellum and propodeum both rounded in profile, except that the propodeum is steeply declivous in front of areola. . . . . 4. ***Cobunus***
   Scutellum and propodeum both pyramidal in profile, the propodeum falling away rather steeply both behind and in front of anterior edge of areola. . . . . 5. ***Facydes***
5. Apical margin of clypeus concave. Temple broad. Mandible moderately wide apically. . . . . 10. ***Ulesta***

Apical margin of clypeus truncate or convex. Temple moderately narrow. Mandible moderately narrow apically. 6

6. Lateral carina of scutellum sharp and extending far beyond middle of scutellum. . . . . 19. ***Stenaoplus***

Lateral carina of scutellum only present at basal corner. 7

7. Tergite III mat and with weak, rather indistinct punctures. Middle field of postpetiole mat or with weak irregular wrinkling. Clypeus about 0.45 as long as wide. . . . . 12. ***Aoplus***

Tergite III polished or subpolished, or sometimes mat, usually with rather coarse and dense punctures. Middle field of postpetiole with fine longitudinal striae or sometimes smooth. Clypeus about 0.55 as long as wide. . . . . 11. ***Stenichneumon***

8. Propodeum in profile with an evenly arcuate dorsal line from base of areola to attachment of abdomen, the curve sometimes with a faint interruption at apex of second lateral area. Apex of second lateral area nearer to abdominal attachment than to costula. . . . . 25. ***Heresiarches***

Propodeum in profile with distinguishable dorsal and posterodorsal faces which meet at a distinguishable angle or tooth at apex of second lateral area. Apex of second lateral area usually farther from attachment of abdomen than from costula. 9

9. Occipital carina reaching base of mandible before joining oral carina. 10

Occipital carina joining oral carina above base of mandible. 11

10. Apex of clypeus without a row of tubercles. Thyridium present. . . . . 2. ***Eccoptosage***

Apex of clypeus with a row of tubercles. Thyridium absent. . . . . 21. ***Nesostenodontus***

11. Scutellum with a lateral carina that extends beyond the middle. 12

Scutellum without a lateral carina, or with a lateral carina that does not reach the middle. . . 13

12. Propodeum without a tubercle in its basal area. . . . . 20. ***Stirexephanes***

Propodeum with a more or less distinct tubercle in base of its basal area. . . . . 23. ***Bystra***

13. Thyridium not distinctly impressed. Propodeum without a median tubercle on its base. Median part of postpetiole smooth, mat, or sometimes with punctures. 14

Thyridium usually more or less impressed. Propodeum with or without a median tubercle on its base (in base of the basal area). Median part of postpetiole nearly always longitudinally striate or coarsely punctate. 16

14. Face and upper part of clypeus with a strong vertical, convexly rounded, median ridge-like elevation. . . . . 22. ***Crathiorada***

Face at most with a median ridge that does not extend on to upper part of clypeus. 15

15. Segments II to IV of female front and middle tarsi not unusually wide or flattened beneath. Upper face of propodeum short to long, its areola short to long, usually bounded by sharp carinae. Propodeal crests absent, weak, or moderately strong, situated normally. Tergite II of male usually with medium or small punctures. . . . . 8. ***Cratichneumon***

Segments II to IV of female front and middle tarsi unusually wide, flattened beneath and with fine dense hairs. Upper face of propodeum rather long, its areola usually long and weakly defined or obscured by coarse wrinkles. Propodeal crests weak to moderately strong, placed rather low and far back. Tergite II of male usually with rather coarse punctures. . . . . 9. ***Eupalamus***

16. Base of propodeum nearly always with a small median tubercle (in base of basal area when this area is distinct). Areola more or less horse-shoe shaped, basally rounded and its apex somewhat indented medially. Median part of postpetiole usually with few to many moderately

coarse punctures, usually without distinct longitudinal striae. Tergites II and III strongly convex, strongly sclerotized, their punctures rather coarse and strong. Thyridium usually rather small and strongly impressed. 17

Base of propodeum nearly always without a median tubercle. Areola usually hexagonal or quadrangular. Median part of postpetiole usually with distinct longitudinal striae but without conspicuous punctures. Tergites II and III usually less strongly convex, less strongly sclerotized, and usually with smaller and weaker punctures. Thyridium usually larger and less strongly impressed. 19

17. Mandible with 1 apical tooth. . . . . 24. ***Monontos***

Mandible with 2 apical teeth. 18

18. Apical part of female flagellum subcylindric, its tip very weakly tapered. Thyridium weakly impressed. Median field of postpetiole sharply bounded, usually sparsely punctate and often with weak longitudinal striae. Body moderately slender. . . . . 6. ***Vulgichneumon***

Apical part of female flagellum often flattened beneath, its tip moderately to strongly tapered. Thyridium moderately to strongly impressed. Median field of postpetiole usually only weakly bounded and with numerous punctures, sometimes also with weak longitudinal striae. Body stout to moderately slender. . . . . 7. ***Barichneumon***

19. Scutellum pyramidal. Propodeum with tooth-like or spine-like apophyses. . . 14. ***Hoplismenus***

Scutellum evenly convex, almost flat to strongly rounded. Propodeum usually without distinct apophyses. 20

20. Postpetiole evenly convex, its middle field not distinctly raised nor bounded on the side by ridges. . . . . 3. ***Lissosculpta***

Postpetiole with its middle field distinctly raised and bounded on each side by a longitudinal ridge. 21

21. Gastrocoelus large and rather deep, without a thyridium. Sternum of third abdominal segment completely sclerotized across the middle or with not more than its median 0.2 membranous. Male flagellum rather thick, the segments extending ventrad of their articulations much farther than they extend dorsad. . . . . 18. ***Ctenichneumon***

Gastrocoelus small to large, shallow to moderately deep, with a distinct thyridium. Sternum of third abdominal segment with its median 0.3 or more membranous, the membranous area showing as a longitudinal fold in dried specimens. Male flagellum not unusually thick, the segments extending equally above and below from their articulations. 22

22. Thyridia 1.0 to 1.4 as wide as the space between them, strongly impressed. Clypeus rather narrow. . . . . 26. ***Intermedichneumon***

Thyridia less than 1.0 as wide as the space between them, weakly to strongly impressed. Clypeus rather narrow to very wide. 23

23. Males. 24

Females. 27

24. Subgenital plate with a rather long median apical lobe. Genital clasper unusually large. . . . . 16. ***Eutanyacra***

Subgenital plate medially rounded or somewhat pointed, without a long lobe. Genital clasper usually not enlarged. 25

25. Carina closing apical side of second lateral area of propodeum (the lateral section of the apical transverse carina) approximately straight, not distinctly angled at its juncture with the apical section of the median longitudinal carina, receiving the longitudinal carina at or close to the

lower lateral corner of areola, this resulting in the combined median apical area and lateral apical areas together forming an elongate hexagon. . . . . 13. ***Pterocormus***

Carina closing apical side of second lateral area of propodeum angled downward at its juncture with the apical section of the median longitudinal carina, receiving the longitudinal carina a little distance below lower lateral corner of areola. 26

26. Propodeum with an obtuse tooth or without a tooth at apex of second lateral area. . . . . 15. ***Setanta***

Propodeum with an acute tooth at apex of second lateral area. . . . . 17. ***Amblyteles***

27. Tip of abdomen acutely pointed. Ovipositor not unusually short. Subgenital plate inconspicuous. . . . . 13. ***Pterocormus***

Tip of abdomen rounded. Ovipositor unusually short. Subgenital plate conspicuous. 28

28. Subgenital plate with a median apical tuft of suberect hairs. . . . . 16. ***Eutanyacra***

Subgenital plate without a median apical tuft of hairs, often with a few longer hairs on its apex but these sparse and either decumbent or only weakly raised. 29

29. Propodeum without a tooth at apex of second lateral area. . . . . 15. ***Setanta***

Propodeum with an acute tooth at apex of second lateral area. . . . . 17. ***Amblyteles***

5. Tribe **LISTRODROMINI**

Key to the genera of Listrodromini

1. Malar space about 0.7 to 0.9 as long as basal width of mandible. Tarsal claws of female simple. . . . . 1. ***Validentia***

Malar space 1.1 to 1.8 as long as basal width of mandible. Tarsal claws of female pectinate, at least the front and middle pair. 2

2. Juxtacoxal carina complete. Clypeus with a median apical point. . . . . 2. ***Listrodromus***

Juxtacoxal carina absent. Clypeus usually without a median apical point. . . . . 3. ***Neotypus***

6. Tribe **ISCHNOJOPPINI**

Ischnojoppa is the only genus known from Taiwan.

7. Tribe **PRISTICEROTINI**

Pristiceros is the only genus known from Taiwan.

8. Tribe **TROGINI**

Key to the genera of Trogini

1. Prepectal carina complete or almost complete dorsally, its upper end turned forward to reach or almost reach front edge of mesopleurum. . . . . 1. ***Neofacydes***

Prepectal carina incomplete dorsally, its upper end not turned forward toward front edge of mesopleurum. 2

2. Prepectal carina present on lower half of mesopleurum as well as on mesosternum. Top of head with a median rounded swelling behind ocelli. . . . . 2. ***Holcojoppa***

Prepectal carina present only on mesosternum. Top of head concave behind ocelli, without a median swelling. . . . . 3. ***Psilomastax***

9. Tribe GOEDARTIINI

Key to the genera of Goedartiini

1. Upper edge of pronotum rounded and inconspicuously punctate. Sternite III with a large median membranous area. Scutellum not evenly convex between the lateral carinae. . . . . 1. ***Charitojoppa***

   Upper edge of pronotum flattened and foveolate. Sternite III usually without a median membranous area. Scutellum evenly convex between the lateral carinae. . . 2. ***Habrojoppa***

10. Tribe ICHNEUMONINI

Key to the genera of Ichneumonini

1. Occipital carina reaching base of mandible without joining hypostomal carina. Mandible very wide. Postpetiole evenly convex, without a distinct middle field. Scutellum with lateral carina on its basal half or more. . . . . 3. ***Atanyjoppa***

   Occipital carina joining hypostomal carina above base of mandible. Mandible moderately narrow to rather wide. Postpetiole nearly always with a distinct middle field. Scutellum with or without a lateral carina. 2

2. Areola reduced to a small polished boss, its surrounding carinae obsolete. 3

   Areola present as a normal or partly normal area, with at least its lateral carinae distinct. . . . 4

3. Sternite III with a median longitudinal fold. Apex of female abdomen acute or subacute, the apex of subgenital plate distant from apex of abdomen. Clypeus moderately wide. . . . . 6. ***Dimaetha***

   Sternite III without a median longitudinal fold. Apex of female abdomen blunt, the subgenital plate reaching almost or quite to apex of abdomen. Clypeus very wide. . . . . 7. ***Callajoppa***

4. Areola within the general convex surface of propodeum, not distinctly raised. 5

   Areola raised above general surface of propodeum, the propodeum sloped away from areola on all sides. 6

5. Abdomen slightly spindle-shaped from second through fifth segments, a little narrower than thorax. Ovipositor rather long. . . . . 1. ***Ichneumon***

   Abdomen approximately parallel-sided from the second through fifth segments, much narrower than thorax. . . . . 2. ***Naenaria***

6. Scutellum weakly convex. Ovipositor moderately long. Female abdomen oxypygous. Postmedian segments of female flagellum widened. . . . . 4. ***Protichneumon***

   Scutellum strongly convex. Ovipositor rather short. Female abdomen amblypygous. Postmedian segments of female flagellum not widened. . . . . 5. ***Amblyjoppa***

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